

MASS.
DOCS.
COLL.

*

UMASS/AMHERST

*



312066 0285 2004 8



FORBES LIBRARY
NORTHAMPTON
MASS.

GIFT OF

*Massachusetts - Secretary of the Com.
monwealth, Boston, Mass.*

The Commonwealth of Massachusetts.

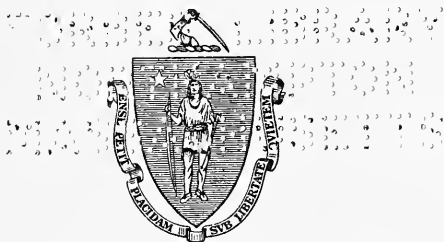
FIFTH ANNUAL REPORT

OF THE

PUBLIC SERVICE COMMISSION.

JANUARY, 1918.

Part I.—Reports and Orders.



BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
32 DERNE STREET.
1918.

PUBLICATION OF THIS DOCUMENT
APPROVED BY THE
SUPERVISOR OF ADMINISTRATION.

The Commonwealth of Massachusetts.

PUBLIC SERVICE COMMISSION.

FREDERICK J. MACLEOD, Cambridge, Chairman, Term expires July 1, 1918.
EVERETT E. STONE, Springfield, . . . Term expires July 1, 1921.
JOHN F. MEANEY, Blackstone, . . . Term expires July 1, 1919.
JOSEPH B. EASTMAN, Winchester, . . . Term expires July 1, 1922.
CHARLES A. RUSSELL, Gloucester, . . . Term expires July 1, 1920.

ANDREW A. HIGHLANDS, Brookline, *Secretary*.
CHARLES E. MANN, Malden, *Executive Secretary*.
ALLAN BROOKS, Harvard, *Assistant Secretary*.

ACCOUNTING DEPARTMENT.

JUSTIN W. LESTER, Boston, *Chief Accountant*.
EDWIN H. FENNO, Needham, *Assistant Accountant*.
ERNEST W. WRIGHT, Boston, *Assistant Accountant*.

RATE AND TARIFF DEPARTMENT.

C. PETER CLARK, Newton, *Chief of Department*.

ENGINEERING DEPARTMENT.

HENRY W. HAYES, Arlington, *Engineer*.
MINOR S. JAMESON, Wellesley, *Assistant Engineer*.
LEWIS E. MOORE, Newtonville, *Engineer of Bridges and Signals*.
WILLIAM J. KEEFE, Boston, *Assistant Engineer of Signals*.

INSPECTION DEPARTMENT.

GEORGE W. BISHOP, Newtonville, *Chief of Department*.

Inspectors.

LEWELLYN H. McLAIN, Melrose.	MICHAEL J. SCULLY, Boston.
HENRY W. SEWARD, Winthrop.	ARTHUR W. HODGES, Brockton.
JOHN H. PARANT, Worcester.	CHARLES E. MONTGOMERY, Springfield.
JOHN W. OGDEN, Malden.	THOMAS LAFFEY, Boston.

Assistant Inspectors.

TIMOTHY A. CONNOR, Boston.	PHILIP SCOTT, Billerica.
JAMES E. RICH, Springfield.	TIMOTHY J. LYNCH, Boston.

TELEPHONE AND TELEGRAPH DEPARTMENT.

WILLIAM H. O'BRIEN, Boston, *Chief of Department*.
JAMES M. CUSHING, Boston, *Telephone Inspector*.
MICHAEL J. CONLEY, Boston, *Telephone Inspector*.
TIMOTHY F. DESMOND, Cambridge, *Telephone Inspector*.

The Commonwealth of Massachusetts.

*To the Honorable Senate and House of Representatives in General Court
assembled.*

We respectfully submit the fifth annual report of the
Public Service Commission:—

Digitized by the Internet Archive
in 2010 with funding from
Boston Library Consortium Member Libraries

COMMISSIONERS' REPORT.

During the year the volume of work requiring the attention of the Commission has continued to be heavy. In the last annual report a table was submitted showing the number of separate matters considered in 1915 and 1916, listed under four heads, as explained in the text. The similar table for the calendar years 1916 and 1917 is as follows:—

CLASS.	<i>Petitions.</i>		
	1916.	1917.	
Railroad,	27	68	
Street railway,	198	162	
Telephone and telegraph,	8	4	
Miscellaneous,	18	2	
	—	251	— 236
	<i>Investigations.</i>		
Railroad,	12	4	
Street railway,	6	6	
Telephone and telegraph,	1	3	
	—	19	— 13
	<i>Complaints.</i>		
Railroad,	160	186	
Street railway,	219	195	
Telephone and telegraph,	603	725	
Miscellaneous,	21	17	
	—	1,003	— 1,123
	<i>Applications.</i>		
Railroad,	201	114	
Street railway,	161	114	
Telephone and telegraph,	8	—	
Miscellaneous,	32	22	
	—	402	— 250
	1,675	1,622	

In 1917 the number of days in which public hearings or formal conferences were held on contested matters was 152, as against 162 in 1916. While the above figures indicate a slight

decrease in volume of business as compared with the previous year, the questions involved have, on the whole, been more complex and difficult of determination. In the past, it has been the practice to hold no hearings in August, except in emergency cases, but this year and last year work was carried on throughout the summer without interruption. The illness during the year of several of the department employees has been a handicap.

Attention is called to the fact that provision has again been made, in the budget which the Commission has submitted for the ensuing year, for increases in the salaries of certain employees. Much the same increases were recommended last year, but the appropriation granted was not sufficient to permit them to be made. They are confined largely to employees now receiving \$1,500 per year or less and are moderate and, as stated last year, less than the similar increases which the companies supervised have found it necessary, with the growing cost of living, to make from time to time in recent years. If the Commission is to be able to attract and hold in its employ men of the caliber which the work demands, it must be in a position to do justice in the matter of compensation. During the year an inspector of large experience in steam railroad operation left the service to accept more remunerative employment elsewhere.

WAR CONDITIONS.

The entry of this country into the European war has brought with it complications in the affairs of transportation and public utility companies which have seriously affected the service furnished to the public. Shortage of fuel and of labor, difficulty of securing either the funds or the material necessary for construction work, and increased government demands have imposed a severe strain upon resources and facilities. In this situation the position of the Commission has been a difficult one. On the one hand it has been confronted by a public complaining of impaired service, and, on the other hand, by companies complaining of the burdens from which they were suffering. Between the two, it has endeavored to maintain an equilibrium and to be guided impartially by the evidence, keeping in touch with the situation in Washington and bearing in mind continually the paramount necessity of taking whatever action would best help

to win the war. Some of the matters which have received consideration in this connection are as follows:—

(1) Early in the summer all the railroad companies operating in the state announced their intention of curtailing passenger service, for the purpose of saving fuel and labor and facilitating the movement of freight. The matter was immediately taken up by the Commission at public hearings and the reasons for the proposed action fully developed. As a result, the reduction in service was permitted, but the Commission reserved the right to consider without prejudice complaints which might thereafter arise, and required the companies to keep it informed as to the actual effect of the reduction upon fuel consumption and freight movement. The new schedules were also substantially modified, before they went into effect, as a result of informal conferences between the inspection department of the Commission and representatives of the companies. Train movements in the morning and evening rush hours were disturbed very little, and in general the reduction affected mid-day trains accommodating relatively few passengers. The Commission is satisfied, from the evidence which it has since received, that a substantial saving of coal has been effected and that the movement of freight has been somewhat helped. Further reductions of similar character have recently been made. One effect of these changes has been to throw a heavier burden upon the trains left in service, and this has frequently resulted in overcrowding and delay. The inspection department has been active in following up this matter and in securing the operation of additional cars, where feasible; but it is probable that, so long as the war continues, the tendency will more and more be to reverse the usual rule, by subordinating passenger to freight service and that the traveling public must expect accommodations inferior to those which they have heretofore enjoyed.'

(2) To secure greater efficiency in freight car movement the Commission sent printed circulars to shippers throughout the state, urging them to load and unload cars quickly and also to load to maximum carrying capacity, regardless of "trade units" and minimum weights. Notices to the same effect were posted in all freight and passenger stations.

(3) The Commission was able to use its good offices in reconciling differences of opinion between the railroads and Boston shippers, with respect to the adoption of the so-called "sailing day" plan. Under this plan, which has since gone into effect, less-than-carload freight is shipped from the important distributing centers to the smaller stations in New England only on certain designated days of the week. This plan has resulted in better loading of the cars and in more economical car movement.

(4) Since 1907, street railway companies have been required, by order of the Commission, to maintain in all box cars, during the period from October 15th to April 15th, an inside temperature, "as nearly as may be, of not less than forty nor more than sixty degrees above zero." Electric heaters use much power and involve a substantial consumption of coal. At the request of the Fuel Administrator for New England, and for the

purpose of conserving the fuel supply in the present emergency, this order has been modified by the Commission so that, unless otherwise ordered, the companies are required to heat their cars "only when, for such length of time and to such extent as may seem necessary."

(5) Because of the coal shortage, the Commission has also interposed no obstacles to various reductions in service in non-rush hours which have recently been made by street railway companies throughout the state. It has, however, reserved the right to deal with such reductions without prejudice upon complaint.

(6) In August the Commission received information that the New England Telephone and Telegraph Company was refusing to accept applications for exchange service and facilities of all kinds, except where required, in its opinion, "in the general interests of the public." The president of the company was immediately summoned before the Commission at a public hearing to explain the reasons for this policy. It developed that no shortage existed, either in materials or in labor, that the policy had been adopted because of the general desirability of conserving resources in war time and as a protection against future contingencies, and that it had not been advised by government representatives or by the parent organization, the American Telephone and Telegraph Company, and was not nation-wide in application. A memorandum was issued by the Commission stating that, while it recognized the general need for economy and conservation and was ready and willing to co-operate to that end, it felt that the company ought not for the present to go beyond advice and recommendation, that a need had not developed for more drastic measures, and that such a policy ought not to be adopted until "directly advised by some central national authority, representing and acting in the public interest, nor until it is made to apply not solely in certain New England states but uniformly throughout the entire country." It was further stated that the amount of conservation which could be effected by limiting telephone service was relatively insignificant and that "infinitely greater opportunities exist which relate to mere luxuries of living."

Reports from the inspection department with respect to freight conditions on the railroads of the state indicate that, while the situation is by no means all that might be desired, conditions are in many respects better than they were in 1916. There is less congestion, less resort to the use of embargoes, and freight is on the whole being handled more efficiently. The recent severe weather has seriously hampered train movements, but this it would have done in normal times. The chief sources of trouble are shortage of labor, poor coal, inadequate motive power and congestion at the western gateways.

Conditions with respect to freight service are likely to be further improved by the recent action of the President in taking

possession and assuming control of all the steam railroads of the country. Precisely what effect this action may have on the powers now exercised by state commissions like our own is uncertain. The proclamation, however, contained the following paragraph dealing with this matter:—

Until and except so far as said director shall from time to time otherwise by general or special orders determine, such systems of transportation shall remain subject to all existing statutes and orders of the Interstate Commerce Commission and to all statutes and orders of regulating commissions of the various states in which said systems or any part thereof may be situated. But any orders, general or special, hereafter made by said director shall have paramount authority and be obeyed as such.

From this it appears that the Commission still retains the authority which it has heretofore exercised, but this status may at any time be changed by order of the director-general. He has been assured by the National Association of Railway and Utilities Commissioners and by its special War Committee, upon which this Commission is represented, of the desire of the state commissions to co-operate and to do everything in their power to make government operation of the railroads during the war an unqualified success.

SPECIAL RAILROAD MATTERS.

Early in November the Interstate Commerce Commission and all the state commissions affected received notice of the desire of all New England railroads to make substantial increases in freight and passenger rates, both inter-
The General Rate Case.
state and intrastate. It is proposed, in general, to increase the single ticket passenger rates from $2\frac{1}{2}$ cents to $2\frac{3}{4}$ cents per mile, to increase the mileage ticket rates from $2\frac{1}{4}$ cents to $2\frac{1}{2}$ cents per mile, to increase trip ticket rates in the Boston suburban district 25 per cent, and to make substantial increases in class freight rates, adopting the classification recently prescribed by the Interstate Commerce Commission in Central Freight Association territory as a basis. The extent of the increases desired is indicated by the fact that for the New York, New Haven and Hartford system (including the Central New England Railway and the New England Steamship Company) the additional revenue to be derived is estimated at \$5,833,615. Other increases in freight rates previously sought and now pend-

ing bring this estimate to \$8,373,290. The increases desired by the other roads are proportionately as large.

To facilitate the trial of this issue, these special New England applications were referred by the Interstate Commerce Commission to Commissioner Anderson, and by agreement with the state commissions joint hearings were held at the Federal Building in Boston, beginning November 21 and continuing until December 15. At these hearings the commissions of Massachusetts, Maine, New Hampshire, Vermont, Rhode Island, Connecticut and New York were represented, and in this way the necessity for separate hearings and separate records was avoided. The issue will be determined, if possible (and unless the taking over of the railroad properties by the federal government makes some other procedure advisable), by joint conference of all the commissions, including the Interstate Commerce Commission. The course pursued in this case illustrates the feasibility and advantage of co-operation between the national and state authorities in the public regulation of great interstate systems.

In the course of these proceedings it developed that the New York, New Haven and Hartford system has been permitted to make, between July 1, 1914, and October 31, 1917, increases in freight and passenger rates estimated at \$7,809,602. This estimate was based on freight tonnage and passenger traffic data available at the times when the various new rates became effective. Allowing for increased tonnage and traffic since these dates, the revenue of the system is now approximately \$9,000,000 larger per year than it would have been if the increases had not been permitted. The Boston & Maine and Boston & Albany railroads have been allowed similar increases.

The vexed question of railroad rates for the transportation of milk was brought one step nearer settlement during the year by the decision of the Commission with respect to the new tariffs filed by the New York, New Haven & Hartford and Boston & Maine companies. These tariffs were intended to conform to the decision of the Interstate Commerce Commission relative to interstate rates for the transportation of milk in New England which was rendered on July 11, 1916. Examination of that decision showed that the federal commis-

**Milk Trans-
portation.**

sion believed that the then existing system of rates and charges was unduly discriminatory against the production of nearby milk for the Boston market and tended to encourage a monopoly in the milk business, and that it desired to correct these tendencies by establishing a proper basis for uniform milk rates throughout all New England. It further appeared, however, that it realized the difficulty and complexity of the problem and regarded the new schedule prescribed as experimental in certain respects and subject to modification at the end of a period of one year.

The evidence in the proceedings before this Commission indicated that, if the basis of rates established by the Interstate Commerce Commission were strictly followed in the intrastate tariffs, the results would in certain respects be directly contrary to the results which it intended to accomplish. For this reason, while recognizing the general desirability of harmony between state and federal action, this Commission felt justified in requiring changes in the intrastate tariffs which would be in accord with the spirit and intent, if not with the letter, of the Interstate Commerce Commission's decision, with a view to securing greater uniformity in these tariffs and improving important details which, in the form proposed, were unduly discriminatory and prejudicial to the interests of Massachusetts producers. These changes were accepted by the railroad companies and have become effective. It is understood, however, that, if the carriers avail themselves of the opportunity held out to them by the Interstate Commerce Commission to seek adjustments in the interstate rates at the end of a period of one year, they will be at liberty also to bring the matter again to the attention of this Commission for renewed consideration. The Boston and Albany rates, which were not involved in the original proceedings before the Interstate Commerce Commission, are somewhat out of line and must receive attention in the near future.

Upon recommendation of the Commission, special legislation was passed by the last General Court removing remaining doubt as to the legal status, under Massachusetts laws, of the New York, New Haven and Hartford system. **New Haven Legislation.** Aside from details, this statute definitely authorized the continued holding and ownership of securities of certain railroad

corporations, most of them leased lines; provided for the elimination of two nondescript companies — the New England Navigation Company and the Millbrook Company — around which much of the scandal of the past has centered; restricted within reasonable limits the powers which subsidiary corporations may exercise; and provided for adequate public supervision over their capitalization in the future. A further section has for its object the gradual replacement from earnings of much of the capital which was wasted in the past through the purchase of securities at prices far beyond their intrinsic worth. To accomplish this result, dividends on common stock are limited to 5 per cent until the company shall have turned back into the property earnings equal in amount to the losses which it will suffer upon the sale of securities under the decree of the United States Court, plus all losses suffered from the dissolution of the New England Navigation Company and the Millbrook Company, plus a reduction of about \$10,000,000 in the book value of the securities of the New York, Westchester and Boston Railway Company which the New Haven company owns. The total, apart from losses from the sale of securities to be made hereafter under the court decree, which are uncertain, has been estimated at about \$20,000,000.

This statute was accepted by vote of the directors of the company. By removing the cloud upon the legal status of the company in Massachusetts it prepared the way for a comprehensive and adequate financial program for the future, including the funding of the large floating debt, which has been a source of constant expense and danger to the company, and the provision of new capital for urgent operating needs. A petition for the approval of an issue of \$45,000,000 of preferred stock, to be used in paying the debt, is now pending before the Commission. Notwithstanding its financial embarrassment, this company, it should be said, has been able in the past two or three years, by conserving its resources and withholding all dividend payments, to effect substantial improvements in facilities and still further important improvements are now under way.

The general statute which was recommended by the Commission to amend and clarify the general railroad laws of the Commonwealth, so that they might in the future more effectively

bar the way for such transactions relative to the securities of other companies as the New Haven company has been guilty of in the past, was passed by the House of Representatives, and later by the Senate in amended form. Inability to agree upon the exact wording of the statute, however, unfortunately resulted in no legislation at all. The Commission would again urge the adoption of this change in the law, were it not for the fact that all the railroads are now in government control. So long as this status continues, any question as to the form and substance of state statutes is a matter of little or no consequence.

Under chapter 149 of the Resolves of 1916 the Commission was directed "to investigate forthwith the method of receiving and delivering freight in the railroad freight houses in the city of Boston, and the causes of delay in the loading and unloading of freight cars; also the charges made by railroad corporations for switching cars in metropolitan Boston; and to take necessary steps and to make appropriate orders to the end that delays may be diminished, congestion relieved and charges made uniform." As stated in the last annual report, the Commission directed C. Peter Clark, the chief of its rate and tariff department, who has had many years of practical experience as a railroad official in dealing with freight traffic problems, to make a personal investigation of the matters specified in this resolve and to submit to the Commission a report, accompanied by definite recommendations. It was the intention to use this report as a basis for public hearings, in order that they might be directed to definite and concrete proposals rather than to a general and indefinite situation.

The Commission regrets to state that the flood of street railway and other rate cases which has developed during the year has so occupied Mr. Clark's attention that his report on the terminal situation has necessarily been delayed. He has spent much time in investigating conditions, not only in Boston but in visiting other large cities throughout the country, and has prepared a preliminary draft of his report, but it is not yet ready for final submission. The abnormal conditions caused by the war, however, have made this delay less serious than it otherwise would have been. The railroad companies have been in no position

**Terminal
Conditions.**

during the year to provide capital for any fundamental improvement in terminal conditions and much difficulty would have been experienced in securing the necessary construction material, even if the funds could have been supplied. Now that the federal government has taken over the properties it may be that war needs will furnish the basis and incentive for such improvements, and, if this proves to be the case, the results of Mr. Clark's study can be used to distinct advantage. Certain important matters have already been brought to the attention of the federal authorities.

It should also be said that various incidental improvements have already resulted from Mr. Clark's investigation. For example, examination of the Boston and Maine freight terminals located one very badly congested point which not only interfered with prompt handling of shipments from Boston but caused delay to western freight passing through the city. The trouble was promptly relieved by building an additional covered transfer platform, 800 feet long and 11 feet wide, which has now been in successful operation for some months and is affording the desired relief.

STREET RAILWAYS.

Under chapter 129 of the Resolves of 1917 a special commission, known as the "Street Railway Investigation Commission," was appointed to sit during the recess for the purpose of investigating and studying "the various problems relating to the control, supervision, regulation, ownership, operation, taxation, capitalization, finance, management and development of street railways in this commonwealth, and to the powers, duties and liabilities of street railway companies." On November 28, 1917, the Chairman of this Commission appeared before the special commission and presented at length our views relative to the problems under consideration and to suggested legislation which seems desirable in the public interest. This statement has been printed and furnished to every member of the General Court, so that further comment in regard to the street railway situation in this report is unnecessary.

By section 14 of chapter 373 of the Special Acts of 1917 the Commission was authorized to expend not exceeding \$15,000 for the purpose of making such investigation as it might deem

necessary in order to determine whether or not the net income of the Boston Elevated Railway Company may be increased by improved methods and practices, and was directed to "report to the next General Court on or before the first Monday in February whether section 10 of chapter 500 of the Acts of the year 1897 should be repealed." The investigation contemplated by this statute has been made and the report is in process of preparation and will be submitted to the General Court in the near future.

TELEPHONE AND TELEGRAPH COMPANIES.

In its last annual report the Commission for the third time urged that it be provided with funds to enable it to undertake a thorough investigation "of the whole situation with respect to telephone service and rates within the commonwealth," and stated the reasons for its recommendation at some length. A special appropriation of \$25,000 for this purpose was asked. Such an appropriation was finally refused, but the general appropriation for the telephone and telegraph department was increased from \$6,500 to \$10,000, the additional amount to be used for such purposes as the Commission might see fit.

During recent years the telephone service furnished within the Commonwealth has been a source of continually increasing complaint. During the past year 725 informal complaints were investigated by the department, as compared with 603 in 1916 and 412 the previous year. The chief of the department has been strongly impressed with the desirability, in addition to the investigating of such specific complaints as they come in, of initiating broader and more comprehensive studies of service conditions. He wishes, for instance, to take typical exchanges and make extensive tests and observations for the purpose of determining the character of the service as a whole and the methods and practices in vogue, following up such an investigation by the steps necessary to correct any conditions found to be unsatisfactory. This plan was tried, experimentally, in one of the Boston exchanges last year, with good results, but could not be continued with the force available. Under the circumstances, therefore, it seemed best to the Commission, instead of undertaking an investigation of the general rate situation with an appropriation deemed wholly inadequate, to use

a portion of the increased appropriation for the purpose of employing a third inspector, so that one member of the force might be detailed for service studies along the lines recommended by the chief. Such an inspector has been employed. A further portion of the increased appropriation has been used to raise somewhat the compensation paid to the men already in the service.

The question now arises whether the appropriation which has thrice been refused should again be sought, so that the Commission may be in a position to undertake a general and thorough investigation of the rate situation. Such an investigation must eventually be made, if the Commission is to perform the duty to the people of Massachusetts which the law contemplates it shall perform. Under normal conditions the Commission would, without hesitation, renew its recommendation. Conditions, however, are distinctly abnormal. At the time when this matter was under consideration by the Legislature last year, the Commission was asked whether the outbreak of the war was a sufficient reason for postponing the investigation recommended, and an opinion to the contrary was expressed. Conditions which have since arisen, however, tend to alter this view. Prevailing high prices of materials and the increases in wages which have been or probably will be granted, make the present outlook for any reduction in rates as a result of an investigation very doubtful. Nearly all the companies under the supervision of the Commission are seeking increases in rates. Moreover, the depletion of clerical forces of the company by enlistment and the draft which has taken place, and the still further depletion which is likely to occur, make it a bad time to impose extra labor upon the statistical, accounting and engineering departments.

Upon consideration, therefore, it has seemed best to the Commission to defer for the present its request for a special appropriation for investigation purposes. There is much, however, which can and should be done, even under prevailing conditions, to lay the foundation for such an investigation. Information in regard to the corporate and financial histories and intercorporate relations of the numerous corporations involved can be secured, and the results of previous investigations, both in this state and elsewhere, can be studied and pre-

pared for future use. No special appropriation for this purpose is desired, but it will be necessary, if the work is to be carried on, that the full appropriation for expert services asked for in the Commission's budget should be granted. The amount specified is but \$8,000, a very meager sum. The work of the Commission in the past two years has been distinctly handicapped by the reduction in the size of this appropriation, and the full amount ought to be allowed in order that sufficient funds may be available, not only for research work in the telephone department, but also for emergency uses in other departments of the Commission's work.

COURT CASES.

Two opinions involving orders of the Commission have been handed down by the Massachusetts Supreme Court during the year. In *National Dock & Storage Warehouse Company v. Boston & Maine Railroad*, 227 Mass. **The National Dock Case.**

197, the petitioner sought to secure a writ of mandamus to compel the railroad company to desist from violating an order of the Commission directing it to discontinue unjust discrimination in rates. The discrimination was caused by the absorption of switching charges over the tracks of a connecting carrier to and from the Commonwealth Pier, and the failure to absorb the like charges to and from the wharves of the petitioner, the absorption of the former charges being due to the provisions of a special contract with the Commonwealth. There were two ways of removing the discrimination. One was to absorb the charges in the case of the National Dock and Storage Warehouse Company, and the other was to cease to absorb the charges in the case of the Commonwealth Pier. The company chose the latter method but was enjoined from putting the new rates into effect by court order, upon the application of the Commonwealth in a suit to enforce specific performance and to restrain the violation of the contract above referred to, which suit is now pending and being heard before a master.

Soon after this injunction the Commission informed the company by letter that, since the method selected for complying with the order of the Commission had not proven feasible, it must comply by other means, and pointed out that this could

be done, if in no other way, by absorbing the switching charges to and from the wharves of the National Dock and Storage Warehouse Company. The following statement was also made: —

Whether such a compliance would result in unreasonably low rates for the service rendered it is unnecessary for the Commission at this time to decide. The opportunity to raise that issue is always open to the company under the statutes.

In other words, if the absorption of the switching charges resulted, in connection with existing rates for the haul upon its own road, in unreasonably low compensation to the Boston and Maine Railroad for the service rendered, it was free at once to file new tariffs with the Commission increasing these rates. The removal of the discrimination against the National Dock and Storage Warehouse Company in no way, it seemed to the Commission, imposed obstacles to such procedure. The Supreme Court, however, has decided that the Commission acted without authority of law and that, before ordering the Boston and Maine Railroad to remove the discrimination, it should have proceeded, if we understand the decision correctly, to determine and fix the rates which would thereafter be just and reasonable for the haul upon its own road, and that, under the conditions disclosed, the order of the court cannot be enforced at this time.

The lines in the city of Fall River owned and operated by the Bay State Street Railway Company were originally owned by the Globe Street Railway Company. In 1895 the **Fall River Case.** city granted to the latter company a location on Slade's Ferry Bridge and adjacent streets, and one of the conditions was that the railway company should sell 6 tickets for a sum not exceeding 25 cents, "each of which shall entitle the passenger to one ride over said company's lines in this city on as favorable conditions as other passengers are now carried." This location and the conditions attached were subsequently confirmed by chapter 552 of the Acts of 1911. On March 15, 1917, the Commission permitted the Bay State company to withdraw the tickets from sale and substitute a rate of 5 cents. The city thereupon brought actions in equity and at common law to secure a reversal of this decision. In *City of Fall River et al. v. Public Service Commission*, and *City of Fall River v.*

Bay State Street Railway Company, decided December 8, 1917, the Supreme Court sustained the ruling of the Commission, following *Arlington Board of Survey v. Bay State Street Railway Company*, 224 Mass. 462, in holding the powers of the Commission to be "plenary over the regulation and establishment of fares on street railways independently of whatever conditions may have been imposed in antecedent grants of location by selectmen of towns or municipal boards." Further opinion was expressed as follows:—

. . . the inquiry under St. 1913, c. 784, §§ 20, 21, whether an increase of fare is necessary "in order to obtain a reasonable compensation for the service rendered," is primarily a question of fact. It is not limited to any particular part of the system which if operated by itself might be found to be more than self-sustaining. And the question whether the company should be permitted to withdraw the commutation tickets called for the exercise of the sound discretion and judgment of the commission, based on the evidence of the company's financial condition, and ability to serve efficiently the public dependent upon the maintenance of its entire system of intercommunication and transportation. We are unable to perceive on the record before us any conclusions of fact, insofar as conclusions of fact are involved, which were unlawful.

In view of the report upon the street railway situation to be made by the special commission appointed under chapter 129 of the Resolves of 1917, and in view of the special war conditions affecting the other companies under its supervision, the Commission this year makes no recommendations with respect to legislation.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

Commissioners.

DEPARTMENT REPORTS.

RATE AND TARIFF DEPARTMENT.

The work of the Rate and Tariff Department has continued along established lines during the past year. Some 2,356 changes in intrastate railroad tariffs have been examined and recorded, as compared with 1,250 the previous year. A large number of these tariffs relate to general increases in rates similar to those applicable to interstate traffic which have been granted by the Interstate Commerce Commission, largely on account of increased costs and changed operating conditions.

Similar changes in the affairs of trolley lines have been reflected by numerous increases, which have averaged about one each week throughout the year.

The year has seen an innovation for this locality in the introduction of a short zone unit as the basis of passenger fares on certain street railways, a plan developed in the West, which has gradually made its way to the Eastern territory. Its first appearance in Massachusetts was on the lines of the Concord, Maynard & Hudson Street Railway Company, where the former zones for the collection of fares, averaging nearly five miles in length, have been abolished and zones of approximately one mile have been substituted. The minimum fare is 6 cents, entitling a passenger to a ride covering three zones (following the long established practice in the case of mileage tickets upon steam roads), and for each zone or fraction over three an additional charge of 2 cents is collected. As the old unit of fare was 6 cents, there would have been no change in the revenue had the old blocks not exceeded three miles. Under the new arrangement many of the short-distance riders experience no additional burden, but on the contrary pay a lower fare where the ride covers portions of two of the old zones. Those riding longer distances pay for the transportation which they actually receive.

This mileage basis of fares was later adopted by the Boston & Worcester and a similar tariff for the Northern Massachusetts is now under consideration by the Commission. Similar tariffs have been submitted by the Bay State Street Railway Company for its interurban lines.

New joint freight tariffs constructed upon a uniform mileage basis and covering the entire properties of the Boston & Albany, the Boston & Maine and the New York, New Haven & Hartford railroads have been introduced during the year. It is the present desire of those roads to modify these tariffs in connection with the general increases now pending before the Interstate Commerce Commission and State Commissions.

Since war conditions have prevailed, the department has been frequently called upon for advice and assistance in procuring transportation for badly needed freight. In some cases large municipal and state improvements substantially completed were held up because of inability to receive relatively small quantities of indispensable material. Correspondence with railroad officials in various localities, explaining conditions, has brought relief in cases where the conditions properly justified exceptions to existing embargoes.

The department was able to be of assistance in a change in operating methods by which the use of unnecessary equipment has been materially curtailed with an actual improvement of the service through the introduction of the so-called "Sailing Day Plan," an arrangement under which shippers forwarding freight consigned to stations of small tonnage concentrate their shipments on stated days of the week, enabling the discontinuance of little-used daily cars.

The study of the Boston Terminal situation commenced last winter has been necessarily suspended a number of times by the pressure of the numerous tariff changes and other insistent work. The greater part of the report is completed, but, owing to the unsettled general rate questions which have been under discussion by the interstate and state authorities since early spring, it is clearly impossible to make at the present moment a consistent recommendation upon the switching matters involved.

Switching service is closely related to short haul local service, if certain handling costs be eliminated. The recent policy of

the Interstate Commerce Commission has emphasized the propriety of having different classes of service bear their fair share of expenses, to the end that passengers should not be asked to assume a burden imposed upon the carriers by handling certain classes of freight at less than cost, or that freight shippers should not be asked to make up a deficit incurred, say, in operating parlor and sleeping cars.

Manifestly, the charge for movement of freight 5 or 10 miles in switching service should bear consistent relation to the movement of the same freight substantially the same distance between different local stations. Until the fundamental mileage basis is determined, no logical and consistent basis for switching charges can be discovered or discussed. It is hoped that these open questions may be disposed of in the near future, making a completion of the terminal report possible.

INSPECTION DEPARTMENT.

The annual and special inspections of steam railroads, private railroads and street railways for the year ended June 30, 1917, were made under the direction of George W. Bishop, Chief of the Inspection Department, representing the Commission. The results obtained from these examinations are shown in this report.

The conditions of steam railroads and street railways with reference to roadbed, track and equipment, when considered as a whole, show no improvement over the unsatisfactory conditions of one year ago. The scarcity of labor and material may well be accepted as a reason why there has been no improvement during the past year, but does not excuse the poor condition of certain properties where no proper provision for depreciation has been made in recent years.

The members of this department are required to devote a substantial amount of time to the adjustment of complaints and securing data for the Commission with reference to special investigations, valuations, physical condition and future needs of railroad and street railway companies.

The number of complaints received in connection with railroad operation was 164; in connection with street railway operation, 230. These complaints were investigated and adjusted by

this department, thus obviating the necessity of public hearings or conferences by the Commission.

The number of inquests in cases of death by accident attended by inspectors and assistant inspectors during the year was 390.

The reports concerning the investigation of such accidents as were specifically called to the attention of the Commission will be found in full in the appendix to the Commission's report.

RAILROADS.

Locomotives.

The number of locomotive inspections made at various times was 3,840. In 3,281 inspections no defects were found. In 559 inspections, locomotives were found defective because of steam leaking, obscuring the vision of enginemen, or were found to have defective boilers, wheels, spark arresters or ash pans. These defects were called to the attention of the proper officials and remedied. The number of special examinations of spark arresters and ash pans was 1 464.

During the year 116 new locomotives were put into operation in Massachusetts, as follows: Boston & Albany railroad, five Mallet type engines and three switchers; Boston & Maine railroad, twenty-four freight, twenty-four switchers and nine passenger engines; New York, New Haven & Hartford railroad, forty-nine Pacific type and two Mikado type engines.

Frog and Switch Blocking.

The number of pieces of foot blocking found to be missing or defective and called to the attention of proper officials, during the year, was 5,121.

Bridge Guards.

The number of bridge guards found defective and called to the attention of proper officials and remedied during the year was 1,178.

Steam Passenger Train Equipment.

During the year, 11,022 passenger coach inspections were made and in 10,150 of these no defects were found. The number of coaches inspected and found defective with reference

to wheels, brakes, lighting, car seat frames, missing emergency tools, or because of dirty condition, was 872.

During the year, the New York, New Haven & Hartford Railroad Company retired 29 cars and put into service 100 new cars; the Boston & Albany Railroad retired 34 cars and put into service 25 new cars; the Boston & Maine Railroad retired 86 cars and put into service 8 new cars.

Steam Freight Train Equipment.

The number of freight cars inspected and no defects found was 2,955, found defective, 16; caboose cars inspected and no defects found, 304, found defective, 8; milk cars inspected and no defects found, 95, found defective, 6.

Passenger Stations.

The number of inspections of passenger stations made at various times where stations were found to be in good or fair condition was 3,576. The number found defective with respect to platforms, lavatories, or because of untidy conditions, and called to the attention of proper officials and remedied, was 101.

Accidents on Steam Railroads.

The number of fatal accidents to individuals investigated was 308. The number of serious personal injuries investigated was 112. The number of other accidents investigated, such as derailments and collisions, was 113.

STREET RAILWAYS.

Certificates for Operation.

The number of inspections of new street railway tracks made as a preliminary to issuing certificates of operation was 74.

Street Railway Equipment.

During the year 4,278 car inspections were made and in 3,103 cases no defects were found, the number of cars found defective with reference to wheels, brakes, lighting, car seat frames, or through untidy conditions, being 1,175.

Accidents.

The number of fatal accidents to individuals investigated was 117. The number of accidents due to broken or loose wheels, broken journals and axles reported, was 217; miscellaneous accidents investigated, such as collisions, personal injuries and accidents caused by faulty operation, 771; accidents caused by spread rails, broken rails, defective special work, poor surface and alignment of track, 907.

The records of the office show that the accidents caused by persons coming in contact with either fenders or wheel guards, or both, were: fatal accidents, 13; serious accidents, 29; neither fatal nor serious, 239. Lifting jacks were used seven times to extricate persons from underneath cars. In one instance the time consumed was one hour and ten minutes. In the other instances the time consumed was twenty minutes, thirteen minutes, eleven minutes, five minutes, four minutes and three minutes, respectively.

ENGINEERING DEPARTMENT.

During the year the personnel of the department has continued the same, excepting that, in May, 1917, Bridge and Signal Engineer Lewis E. Moore entered the Engineer Reserve Corps of the United States Army as a captain, since which time the bridge work has been under the direction of Engineer Henry W. Hayes, with the occasional employment of Professor James L. Barker of the Massachusetts Institute of Technology as consulting bridge engineer.

Investigations of expenditures have been made on account of additions and betterments, charged against issues of capital stock previously authorized by the Commission, or upon which authority to issue capital stock or bonds was desired by the Boston & Albany Railroad Company, the Boston Elevated Railway Company, and the West End, Springfield, Bay State, Boston & Worcester and Plymouth & Sandwich street railway companies.

The department has made an examination and valuation of the property of the Swansea & Seekonk (formerly of the Providence & Fall River) Street Railway Company.

In connection with the petition of the Bay State Street Railway Company for an increase of fares, particular studies were made of the Fall River district.

In connection with the investigation by the Rate and Tariff Department of the freight facilities of Boston, many maps and diagrams have been prepared.

Copies of maps and cost data, prepared by the railroads for the valuation by the Interstate Commerce Commission, have been filed, unit costs are being tabulated and preparations are being made for checking the valuations of railroad land.

In addition to the above, studies and reports on minor matters have been made, and, under authority of chapter 527, Acts of 1914, about fifty days have been spent by the Engineer attending hearings and conferences and examining statements of expenditures in connection with the elimination of grade crossings for the department of the Attorney-General, most of which was due to conferences and preparation therefor on the final accounts for the crossings at Lynn.

BRIDGE AND SIGNAL DEPARTMENT.

During the year ending June 30, 1917, the following work has been done by the Bridge and Signal Department: —

The following statement gives the number of bridges which have been inspected: —

Highway bridges carrying street railways,	137
Bridges used exclusively by street railways,	20
Steam railroad bridges,	177
Total,	334

Repairs were recommended in eighteen of the above cases and rebuilding in three cases. The strength of fifty-three bridges of all classes was computed. In addition, a number of plans for rebuilding or strengthening bridges have been received and approved with or without suggested modifications.

The following statement gives the number of signal inspections that have been made: —

Interlocking towers,	108
Lever stands,	14
Signals,	46

Twenty-three recommendations of changes in signals were made. Forty plans for interlocking towers and for signal changes were examined and checked. The operation of signals was observed from locomotives both by day and by night. The signal conditions involved in eight collisions and three derailments were investigated.

Approval of proposed changes or new construction was recommended in the following number of cases: 10 towers, 12 lever stands, 6 automatic signal layouts and 26 signal layouts on street railways. In all of the above cases careful study was given to the proposed work and in many cases changes which seemed desirable were recommended before the plans were approved.

During the year all switches in automatic signal territory were inspected and tested, together with all lever stands on the following railroads: —

New York, New Haven & Hartford.

Boston & Maine.

Boston, Revere Beach & Lynn.

Many defective and undesirable conditions were discovered which were reported in detail to the Commission and copies of these reports were transmitted to the companies for their immediate consideration. Steps have been taken to improve conditions. The most important results have been the proposed installations of the most modern type of semaphore signals that are to be installed between the following points on the New York, New Haven & Hartford system: —

Readville transfer to State Line.

Atlantic to Middleborough.

Plans are now being prepared and the material is being ordered to complete the work as soon as possible. Both of these installations will improve conditions materially and in the former case will certainly expedite traffic between the two points.

RAILROAD BRIDGES.

Following is a statement regarding the bridges on the steam railroads of the Commonwealth, accompanied by tables: —

Table I gives the total number of bridges of each type on each of the railroads.

Table II gives the approximate total length of bridges of stone, wood and metal on each road.

Table III gives a summary of the bridge work done during the six months ending December 31, 1916, excepting that on the New York, New Haven & Hartford Railroad, which is for the year ending June 30, 1917.

TABLE I. — *Number and Description of Railroad Bridge Spans in Massachusetts, December 31, 1916.*

RAILROADS.	Pile Bridges.	Wooden Trestles.	Wooden Stringers.	Braced or Trussed Stringers.	Wooden or Combination Trusses.	Stone, Concrete, or Brick Arches.	I-Beams.	Plate Girders.	Metal Riveted Trusses.	Metal Pin-connected Trusses.	Rails.	Pin-connected Metal Swing Bridges.	Metal Folding, Rolling Lift, Bascule or Jack-knife Draws.	Pratt, Howe, or other Wooden Jack-knife Draws.	Plate Girder Swing Bridges.	Total Spans Stone Bridges.	Total Wooden and Combination Bridges (Fixed Spans).	Total Metal Bridges (Fixed Spans).	Total Movable Bridges.	Grand Totals.	Total Length of Pile and Trestle Bridging (Approximate).
Boston & Albany,	5	2	1	1	1	49	51	109	6	1	1	1	4	1	1	49	7	166	4	226	2,197
Boston & Maine,	60	7	45	1	3	88	72	228	34	12	1	1	7	4	1	88	115	346	14	563	18,923
Boston, Revere Beach & Lynn,	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1	2	7	4,980
Central Vermont,	5	2	7	1	1	1	11	16	9	7	1	1	1	1	1	1	14	44	1	58	504
New York, New Haven & Hartford, ¹	60	29	61	1	3	143	86	631	25	17	34	1	6	1	1	148	154	793	7	1,102	10,570
Totals,	135	40	113	2	6	285	220	934	74	36	35	2	18	4	2	285	295	1,349	27	1,956	37,179

¹ As of June 30, 1917, and includes spans of 8 feet in the clear and over; on other railroads spans of 10 feet and over are included.

TABLE II. — *Length of Bridging of Wood, Stone and Metal, December 31, 1916.*

RAILROADS.	WOODEN SPANS.		STONE OR CONCRETE SPANS.		METAL SPANS.	
	Num-ber.	Total Length (Feet).	Num-ber.	Total Length (Feet).	Num-ber.	Total Length (Feet).
Boston & Albany,	7	2,197	49	1,589	170	13,012
Boston & Maine,	120	20,869	88	2,201	355	28,318
Boston, Revere Beach & Lynn,	5	4,980	-	-	2	140
Central Vermont,	14	701	-	-	44	3,001
N. Y., N. H. & Hartford,	154	11,825	148	3,830	800	29,746
Totals,	300	40,572	285	7,620	1,371	74,217

TABLE III. — *Bridge Work Done in the Year ending December 31, 1916.*

RAILROADS.	NEW BRIDGES BUILT.			BRIDGES REBUILT OR REPLACED.			BRIDGES STRENGTHENED OR EXTENSIVELY REPAIRED.		
	Wood.	Stone or Concrete.	Metal.	Wood.	Stone or Concrete.	Metal.	Wood.	Stone or Concrete.	Metal.
Boston & Albany,	-	-	-	-	-	4 ¹	-	-	-
Boston & Maine,	-	-	-	10	-	2	3	3	15
Boston, Revere Beach & Lynn,	-	-	-	-	-	-	-	-	-
Central Vermont,	-	-	-	1 ²	-	3 ²	1	-	-
N. Y., N. H. & Hartford,	-	-	5	3	5	20	-	1	-
Totals,	-	-	5	14	5	29	4	4	15

¹ Replaced by concrete.² Replaced by I-beam.

On the Boston & Albany railroad a deck truss has been substituted by a reinforced concrete arch and a pony lattice truss, through truss and I-beam bridges have been replaced by through plate girders.

On the New London Northern one wooden stringer bridge has been rebuilt as an I-beam and three deck plate girders have been renewed with I-beam structures. One wood stringer bridge has been extensively repaired.

On the Boston, Revere Beach & Lynn only ordinary repairs have been made.

On the Boston & Maine the following bridges have been rebuilt in kind; two pile trestles; eight wooden stringers; one deck plate girder; one steel deck truss. One pile trestle, three stone arches, one iron stringer, one deck plate girder, and one deck Howe truss have been extensively repaired. The usual repairs to ties and guard timbers have also been made.

TELEPHONE AND TELEGRAPH DEPARTMENT.

There has been a substantial increase in the routine work of the department during the year. Probably no Commission in the country has a problem quite like that existing in the Metropolitan district, with nearly fifty active business cities and large towns bound together as a unit for telephonic purposes and where the situation from a service standpoint has been acute during the past few years. The department has specialized, as far as its facilities would permit, on service problems and has encouraged subscribers to bring their troubles to the department "over the telephone" or by personal call, as against the old method of correspondence, involving more or less delay. The very nature of most telephone complaints necessitates a special treatment as against the ordinary failure of service in the other branches of public service.

The appropriations for the department were increased by the Legislature of 1917, as a result of which an additional inspector has been added, making three in all. The new man, Timothy F. Desmond of Cambridge, comes to the Commission after nearly fifteen years' experience in practical telephone work. As a result of this addition, one inspector will be employed continuously in making test traffic studies of exchanges. This plan was tried out last year in the Dorchester exchange and a notable improvement in service resulted, but it was impracticable to continue it with the force available.

During the past year there were 725 complaints and inquiries, 662 of which required the services of an inspector and many of which necessitated a number of visits. The great majority of these complaints have been satisfactorily adjusted without the necessity of hearings before the full Commission.

In addition, the inspection force made 355 inspections and visits to exchanges, 2,649 service tests from subscribers' stations, and 1,347 service tests from the department office. Service tests were made under all conditions, both day and night. Inventories of the Automatic Telephone Company of New Bedford and the Highland Telephone Company were made by the department, in connection with the application of those companies for additional stock and bond issues. The following is a list of matters heard by the Commission at public hearings: —

(1) Relative to reduction of toll rates between Sturbridge and Southbridge.

(2) Relative to foreign mileage charges as applied to potential exchanges, — John J. Burke, Gloucester, petitioner.

The Sturbridge-Southbridge and Gloucester cases involved practically the same question, — that of rates in the so-called "potential" exchanges. By the Commission's decision, subscribers in these small exchanges who prefer service in some larger adjacent physical exchange may, by the payment of the so-called foreign mileage charge, be listed as subscribers of and have service in both exchanges without additional charge. The order also provided that potential exchanges shall be included with Group 8 exchanges and supply one and two party business and residence service when desired.

(3) Relative to discontinuance of six-party service in Salem, Beverly, Danvers and Peabody.

This was a case where an unlimited six-party residence district service, which had been obsolete since 1911, was to be eliminated, making the next service available for subscribers the two-party rate of \$33, as against the obsolete rate of \$25. The Commission ordered the company to establish a four-party service at a rate of \$27.

(4) Relative to free or reduced rates for charitable purposes.

Under the law, the Commission must approve any charitable purposes for which free or reduced rates are granted. Upon consideration, it developed that the company followed no consistent rule, and that discounts of widely varying percentages or amounts were granted. The matter was left largely to the discretion of local managers. The Commission defined the character of the organizations which might receive such discounts, and the New England Telephone and Telegraph Company has established a uniform rule, applicable to all such cases.

(5) Relative to the refusal of the New England Telephone and Telegraph Company to install new service.

This case came up on motion of the Commission as the result of orders issued by the New England Telephone and Telegraph Company practically stopping new installations of residence telephone service, and to a large extent business service as well. At the hearing the company alleged

that this restriction was advisable in order properly to conserve materials and labor for war purposes and insure the company's ability to meet necessary demands which may arise in the future. It was admitted that this action was not the result of any suggestion from either the United States Government or the American Telephone and Telegraph Company, the parent organization, and represented no nation-wide policy. In a memorandum issued in this case the Commission stated that, while agreeing that conservation and the exercise of strict economy were desirable, it was not satisfied that the company ought, until so advised by the federal authorities, to attempt to force such a policy upon its patrons or to go beyond advice and recommendation. The evidence indicated no emergency, so far as telephone apparatus and supplies were concerned, justifying more stringent measures.

(6) Petition for the restoration of service disconnected because of abusive treatment of operators.

It has come to the attention of the department from time to time that a number of subscribers still receive service on obsolete rates not provided for in the existing schedule. It was suggested to the company that a more active campaign be instituted, in order that such irregularities might be eliminated as rapidly as possible without working any unnecessary hardships on those who had enjoyed the benefits of such irregularities. As a result of this suggestion, 1,250 obsolete contracts have already been changed or are in process of change to conform to the active existing schedule as filed with the Commission, and it is expected that the remainder of the obsolete rates and practices will be eliminated during the coming year. In addition, some 2,000 cases of irregular combination line rates have been changed to conform to the standard rates.

During the latter part of the year the chief of the department visited a number of other state commissions, including New York, New Jersey, Pennsylvania, Illinois, Wisconsin and Indiana, with a view to observing the methods of the various commissions in the handling of telephone rates and service, and to observe telephone service conditions in the larger cities visited.

RAILROAD STATISTICS.

Annual returns for the year ending December 31, 1916, have been received from thirty-six railroad corporations, also a return from the receiver of the Boston & Maine Railroad. Returns have also been received from a canal company and a sleeping car company.

There was returned the past year a net increase of 13.29 miles of railroad line located in this Commonwealth, caused by additions and remeasurements. There was a decrease of 2.26 miles of second main track, 5.02 miles of third main track, .04 of a mile of fourth main track and an increase of 3.32 miles of side track.

There are now in Massachusetts 2,141.47 miles of main and branch railroad line. The total length of railroad track within the Commonwealth, including second, third and fourth main track and side track, is 4,968.16 miles.

STATISTICS.

The following compilations of statistics are from the returns of the several railroad companies to the Commission for the year ending December 31, 1916.

The 4.20 miles of road owned by the Hartford & Connecticut Western, located in this Commonwealth and operated by the Central New England, are not included in the following tables and statistics.

The following table gives the length of railroad line and track in this Commonwealth on December 31, 1916, as compared with June 30, 1916: —

Railroad Mileage in Massachusetts, June 30 and December 31, 1916.

RAILROAD MILEAGE.	June 30, 1916.	December 31, 1916.	Increase.
	Miles.	Miles.	Miles.
Length of main and branch lines,	2,128.18	2,141.47	13.29
Length of second track,	949.81	947.55	2.26*
Length of third track,	83.64	78.62	5.02*
Length of fourth track,	46.00	45.96	.04*
Length of side track,	1,751.24	1,754.56	3.32
Total reckoned as single track,	4,958.87	4,968.16	9.29

* Decrease.

Mileage Owned.

The total length of railroad line *owned* by the Massachusetts companies *in* and *out* of the Commonwealth is 4,258.97¹ miles; and the total length of railroad track so owned is 9,117.46² miles. The miles of main and branch line, of second, third and fourth main track, and of side track, owned December 31, 1916, and the increase or decrease over the previous June 30, are stated in the following table:—

Mileage Owned by Reporting Companies, June 30 and December 31, 1916.

MILEAGE OWNED.	June 30, 1916.	December 31, 1916.	Increase.
	Miles.	Miles.	Miles.
Length of main and branch lines,	4,418.47 ³	4,258.97 ¹	159.50*
Length of second track,	1,574.22	1,573.10	1.12*
Length of third track,	175.56	179.57	4.01
Length of fourth track,	112.62	116.28	3.66
Length of side track,	2,980.22 ⁴	2,989.54 ⁵	9.32
Total reckoned as single track,	9,261.09 ⁶	9,117.46 ²	143.63*

¹ Includes 18.09 miles electric street railway.² Includes 19.03 miles electric street railway track.³ Includes 18.10 miles electric street railway.⁴ Includes 1.18 miles electric street railway.⁵ Includes .94 of a mile electric street railway.⁶ Includes 19.28 miles electric street railway track.

* Decrease.

NOTE.—The decrease in mileage is largely caused by the fact that the Central Vermont Railway Company did not include in its last report the mileage of certain subsidiary companies which are separately operated.

Mileage Operated.

The length of railroad line *operated* by the Massachusetts companies, *within* and *without* the Commonwealth, including roads operated under lease or contract as well as roads owned, is 5,169.15¹ miles; and the total length of track so operated is 10,594.19² miles, — as shown in detail, with the decrease from the previous June 30, in the next table: —

Mileage Operated by Reporting Companies, June 30 and December 31, 1916.

MILEAGE OPERATED.	June 30, 1916.	December 31, 1916.	Increase.
	Miles.	Miles.	Miles.
Length of main and branch lines,	5,303.90 ¹	5,169.15 ¹	134.75*
Length of second track,	1,661.11	1,640.88	20.23*
Length of third track,	220.39	203.79	16.60*
Length of fourth track,	156.05	139.42	16.63*
Length of fifth and sixth track,	19.29	19.29	—
Length of side track,	3,431.81 ³	3,421.66 ⁴	10.15*
Total reckoned as single track,	10,792.55 ⁵	10,594.19 ²	198.36*

¹ Includes 46.80 miles electric street railway.

² Includes 49.54 miles electric street railway track.

³ Includes 3.20 miles electric street railway.

⁴ Includes 2.74 miles electric street railway.

⁵ Includes 50.00 miles electric street railway track.

* Decrease.

NOTE. — The decrease in mileage is largely caused by the fact that the Central Vermont Railway Company did not include in its last report the mileage of certain subsidiary companies which are separately operated.

Miles of Railroads Owned and Operated, December 31, 1916.

RAILROAD COMPANIES.	Length of Line.	Second Track.	Third Track.	Fourth Track.	Side Track.	Total.
Attleboro Branch,	3.72	—	—	—	1.42	5.14
Boston & Albany,	393.97	218.83	84.40	24.84	406.74	1,128.78
Boston & Maine,	2,305.50	591.11	4.20	1.98	1,345.09	4,247.88
Boston, Revere Beach & Lynn,	13.20	13.20	—	—	4.10	30.50
Central Vermont,	411.20	6.20	—	—	158.25	575.65
Grafton & Upton,	18.10	—	—	—	3.79	21.89
Hoosac Tunnel & Wilmington,	24.00	—	—	—	5.06	29.06
Nantucket,	9.12	—	—	—	.15	9.27
New York, New Haven & Hartford,	1,988.04	810.71	115.19	131.89 ¹	1,495.72	4,541.55
Union Freight,	2.30	.83	—	—	1.34	4.47
Total,	5,169.15	1,640.88	203.79	158.71	3,421.66	10,594.19

¹ Including 19.29 miles of fifth and sixth track.

COMPARATIVE GENERAL BALANCE SHEET.

In any examination for purposes of comparison between the report here following and reports prior to 1914, it must be distinctly understood that by reason of the adoption by the Commission, under authority of law, of the form of return prescribed by the Interstate Commerce Commission, the return now adopted differs substantially in principle from the return formerly in use under authority of the Commission. The assets and liabilities in the comparative general balance sheet of the companies, as returned December 31, 1916, have been tabulated and the increase or decrease in each class as compared with 1915 appear in the two following tables:—

Assets, December 31, 1915 and 1916.

ASSETS.	1915.	1916.	Increase.
Road and equipment,	\$511,692,893 05	\$516,312,725 74	\$4,619,832 69
Improvements on leased railway property, . .	9,693,367 95	10,495,335 34	801,967 39
Sinking funds,	1,287,491 13	946,108 72	341,382 41*
Deposits in lieu of mortgaged property sold, .	—	—	—
Miscellaneous physical property,	5,726,812 54	5,795,278 13	68,465 59
Investments in affiliated companies,	211,345,830 18	207,342,779 07	4,003,051 11*
Other investments,	47,475,753 99	46,776,365 24	699,388 75*
Current assets,	42,879,490 15	54,838,559 99	11,959,069 84
Deferred assets,	3,515,688 97	15,912,643 83	12,396,954 86
Unadjusted debits,	5,816,264 27	5,105,368 26	710,896 01*
Grand total,	\$839,433,592 23	\$863,525,164 32	\$24,091,572 09

* Decrease.

Liabilities, December 31, 1915 and 1916.

LIABILITIES.	1915.	1916.	Increase.
Capital stock, common,	\$283,712,015 70	\$283,712,015 70	—
Capital stock, preferred,	25,009,800 00	25,009,800 00	—
Total capital stock,	\$308,721,815 70	\$308,721,815 70	—
Premium on capital stock,	34,602,875 21	34,509,999 56	\$92,875 65*
Funded debt,	348,822,100 00	348,361,882 50	460,217 50*
Notes,	37,307 69	37,307 69	—
Open accounts,	1,286,564 16	1,447,399 53	160,835 37
Current liabilities,	87,883,191 89	86,939,531 85	943,660 04*
Deferred liabilities,	12,327,609 48	25,239,712 37	12,912,102 89
Unadjusted credits,	18,671,504 56	20,273,568 57	1,602,064 01
Appropriated surplus,	8,374,265 14	8,377,772 59	3,507 45
Profit and loss,	18,706,358 40	29,616,173 96	10,909,815 56
Grand total,	\$839,433,592 23	\$863,525,164 32	\$24,091,572 09

* Decrease.

CAPITAL STOCK AND DIVIDENDS.

The aggregate capital stock December 31, 1916 (not including the premiums on sale of capital stock as returned in the form of return), of the thirty-three corporations making returns was \$308,721,815.70.

The total amount of dividends declared during the year was \$7,313,610, — an increase of \$17,000 over the previous June 30.

Twenty-one corporations declared dividends varying in rate from 2½ to 14 per cent; the following table gives the name of the dividend-paying companies, the rate per cent, and amount of dividend declared: —

NAME OF COMPANY.	Rate Per Cent.	Amount of Dividends declared.
Attleboro Branch,	4	\$5,268 00
Boston & Albany,	8¾	2,187,500 00
Boston & Lowell,	8	614,352 00
Boston & Providence,	10	399,600 00
Boston, Revere Beach & Lynn,	8	68,000 00
Chatham,	5	3,410 00
Connecticut River,	10	323,330 00
Fitchburg, ¹	5	943,000 00
Holyoke & Westfield,	14	36,400 00
Lowell & Andover,	8	50,000 00
Nashua & Lowell,	9	72,000 00
New London Northern,	10	150,000 00
North Brookfield,	2½	2,500 00
Norwich & Worcester, ¹	8	240,000 00
Old Colony,	7	1,560,580 00
Pittsfield & North Adams,	5	22,500 00
Providence & Worcester,	10	350,000 00
Stony Brook,	7	21,000 00
Union Freight,	7	20,090 00
Vermont & Massachusetts,	6	191,580 00
Ware River,	7	52,500 00

The amount of capital stock of the twenty-one dividend-paying companies was \$102,436,725,² on which the average rate of dividend was 7.13 per cent.

The following table gives the total capital stock outstanding at the end of the year; the net income available for dividends (after paying all expenses, interest, taxes, rentals and other charges); the amount of dividends declared; and the average percentage of dividends to total capital stock, for each of the last ten years: —

¹ Preferred stock only.

² Including common stock on which, in the case of two of these companies, no dividend was paid.

Capital Stock, Net Income and Dividends, 1908-1916.

YEARS.	Capital Stock.	Net Divisible Income.	Dividends Declared.	Percent- age to Total Capital Stock.
1908,	\$235,462,291	\$11,602,252	\$17,683,965	7.51
1909,	238,900,816	16,065,768	16,964,681	7.10
1910,	285,100,341	20,162,394 ¹	18,996,657	6.70
1911,	324,445,166	17,335,645 ¹	21,780,406	6.71
1912,	328,838,816	21,997,307 ¹	23,298,074	7.08
1913,	330,011,516	16,044,299 ¹	22,136,779	6.70
1914,	330,012,176	4,564,500 ¹	9,650,896	2.92
1915,	308,721,816	9,181,350 ¹	7,292,240	2.36
1916,	308,721,816	17,758,541 ¹	7,296,610	2.36
1916, ²	308,712,816	20,727,735 ¹	7,313,610	2.37

¹ Appropriations for additions, betterments and reserves deducted.² Year ending December 31, 1916.

FUNDED DEBT.

The aggregate funded debt of the companies December 31, 1916 (not including "nonnegotiable debt to affiliated companies" as returned in the form of return), was \$348,361,882.50, — a decrease of \$460,217.50 over the previous year, resulting from additions and deductions as follows: —

Additions: —

Boston & Lowell, \$500,000 00

Deductions: —

Boston & Maine, \$140,000 00
 Central Vermont, 145,000 00
 Fitchburg, 500,000 00
 Hoosac Tunnel & Wilmington, 2,000 00
 New York, New Haven & Hartford, 173,217 50

Total deductions from funded debt, \$960,217 50

Net deductions from funded debt, \$460,217 50

INCOME AND EXPENDITURES.

The total income of the companies from all sources, for the year ending December 31, 1916, was \$183,746,022.70, and the total expenditures, including dividends declared, were \$170,-331,897.25, showing a net surplus for the year of \$13,414,125.45 to be added to the surplus account.

The sources of total income, and the amount derived from each source as compared with the previous June 30, were as follows: —

Total Income, June 30 and December 31, 1916.

INCOME.	June 30, 1916.	December 31, 1916.	Increase.
Total railway operating revenues,	\$154,018,956 20	\$163,463,009 76	\$9,444,053 56
Miscellaneous operating income,	10,601 65	9,321 48	1,280 17*
Income from lease of road,	12,367,046 64	12,384,287 09	17,240 45
Nonoperating income,	7,188,816 29	7,889,404 37	700,588 08
Gross income,	\$173,585,420 78	\$183,746,022 70	\$10,160,601 92

* Decrease.

The items of the total expenditures for the year ending June 30, 1916, and also those for the year ending December 31, 1916, with the surplus for the above years, and the increase or decrease in each item are shown in the following table: —

Total Expenditures, June 30 and December 31, 1916.

EXPENDITURES.	June 30, 1916.	December 31, 1916.	Increase.
Railway operating expenses,	\$104,553,722 17	\$110,802,254 92	\$6,248,532 75
Railway tax accruals,	5,841,699 22	6,108,976 69	267,277 47
Rents for lease of road,	15,219,717 86	15,249,488 98	29,771 12
Hire and rent of equipment,	6,666,466 53	7,949,021 02	1,282,554 49
Joint facilities and other rents,	3,552,776 89	3,569,763 77	16,986 88
Interest on funded and other debts,	18,480,668 67	17,817,677 07	662,991 60*
Other deductions from income,	1,306,152 20	1,320,725 01	14,572 81
Dividend appropriations of income,	7,296,610 00	7,313,610 00	17,000 00
Other appropriations of income,	205,676 25	200,379 79	5,296 46
Gross expenditures,	\$163,123,489 79	\$170,331,897 25	\$7,208,407 46
Surplus for the year,	10,461,930 99	13,414,125 45	2,952,194 46

* Decrease.

OPERATING REVENUES AND EXPENSES.

The operating revenues and expenses of operation for the year ending December 31, 1916, are classified, and compared with those of the year ending June 30, 1916, in the following table:—

Operating Revenues and Expenses, June 30 and December 31, 1916.

REVENUES AND EXPENSES.	June 30, 1916.	December 31, 1916.	Increase.
Freight revenue,	\$83,781,742 47	\$87,678,738 32	\$3,896,995 85
Passenger revenue,	52,897,602 83	55,957,122 00	3,059,519 17
Excess baggage revenue,	305,216 77	288,961 11	16,255 66*
Sleeping, parlor and chair car revenue,	12,632 08	15,275 25	2,643 17
Mail revenue,	1,733,067 15	1,887,408 11	154,340 96
Express revenue,	5,947,228 29	6,984,158 70	1,036,930 41
Milk revenue,	1,071,965 81	1,193,355 91	121,390 10
Other rail-line revenue,	2,247,819 49	2,657,007 88	409,188 39
Total rail-line transportation revenue,	\$147,997,274 89	\$156,662,027 28	\$8,664,752 39
Water-line transportation revenue,	14,405 85	15,172 64	766 79
Incidental operating revenue,	5,257,322 94	6,006,192 45	748,869 51
Joint facility operating revenue,	749,952 52	779,617 39	29,664 87
Total railway operating revenue,	\$154,018,956 20	\$163,463,009 76	\$9,444,053 56
Operating expenses,	104,553,722 17	110,802,254 92	6,248,532 75
Net revenue from railway operations,	\$49,465,234 03	\$52,660,754 84	\$3,195,520 81

* Decrease.

The next table shows the revenue from passenger service and freight service respectively, the other revenue from operation, and the total operating revenues on all of the roads for each of the past ten years:—

Total Revenue from Operation for Ten Years, 1908-1916.

YEARS.	Revenue from Passenger Service.	Revenue from Freight Service.	Other Revenue from Operation.	Total Operating Revenues.
1908,	\$49,038,322	\$55,687,041	\$1,584,123	\$106,309,486
1909,	48,458,423	56,945,111	2,702,238	108,105,772
1910,	52,995,871	64,070,157	3,074,965	120,140,993
1911,	55,602,106	65,038,750	3,318,634	123,959,490
1912,	57,142,152	68,266,492	3,665,667	129,074,311
1913,	59,553,665	72,867,194	4,189,454	136,610,313
1914,	58,984,655	69,992,980	4,251,698	133,229,333
1915,	57,861,917	69,664,516	6,310,502	133,836,935
1916,	61,967,713	83,781,742	8,269,501	154,018,956
1916, ¹	66,326,281	87,678,738	9,457,991	163,463,010

¹ Year ending December 31, 1916.*Ratio of Operating Expenses to Operating Revenues.*

The following table gives in like manner the total operating revenues, the operating expenses, the ratio of operating expenses to total operating revenues, and the net revenue from operation for all the companies for ten years:—

Ratio of Operating Expenses to Total Operating Revenues, 1908-1916.

YEARS.	Total Operating Revenues.	Operating Expenses.	Ratio of Operating Expenses to Operating Revenues.	Net Revenue from Operation.
1908,	\$106,309,486	\$80,956,652	76.15	\$25,352,834
1909,	108,105,772	75,048,921	69.42	33,056,851
1910,	120,140,993	82,067,516	68.31	38,073,477
1911,	123,959,490	89,525,902	72.22	34,433,588
1912,	129,074,311	90,131,969	69.83	38,942,342
1913,	136,610,313	99,565,217	72.88	37,045,096
1914,	133,229,333	101,633,343	76.28	31,595,990
1915,	133,836,935	95,884,771	71.64	37,952,164
1916,	154,018,956	104,553,722	67.88	49,465,234
1916, ¹	163,463,010	110,802,255	67.78	52,660,755

¹ Year ending December 31, 1916.

INCOME AND EXPENDITURES OF THE THREE LEADING RAILROADS IN THE COMMONWEALTH.

The following table shows in detail the revenues, income and expenditures of the three leading railroads of the Commonwealth as returned for the year ending December 31, 1916:—

Revenues, Income and Expenditures for the Year ending December 31, 1916.

	Boston & Albany. ¹	Boston & Maine.	New York, New Haven & Hartford.
Revenue from freight,	\$12,047,141 52	\$33,640,586 97	\$38,727,424 73
Revenue from passengers,	6,769,591 30	16,052,105 98	31,085,035 06
Revenue from other transportation,	1,895,541 36	4,038,632 04	6,602,009 75
Revenue from incidental operations,	893,234 98	1,649,469 86	3,311,862 37
Revenue from joint facility,	71,632 62	2,750 03	705,834 74
Total railway*operating revenues,	\$21,676,541 78	\$55,383,544 88	\$80,432,166 65
Net revenue from miscellaneous operations,	—	—	9,321 48
Nonoperating income,	415,841 52	1,184,619 78	7,288,280 76
Total income,	\$22,092,383 30	\$56,568,164 66	\$87,729,768 89
Operating expenses,	\$13,625,484 07	\$38,251,715 88	\$54,372,028 80
Taxes,	784,997 09	2,091,088 64	3,005,254 61
Hire of equipment,	1,583,822 89	2,898,574 66	3,346,483 49
Rent of leased lines,	3,140,959 33	5,659,634 42	6,151,342 73
Joint facility and other rents,	203,855 39	165,089 22	3,160,996 66
Interest on funded debt,	—	1,733,780 00	9,354,991 31
Interest on unfunded debt,	—	896,864 27	1,539,576 22
Other deductions,	1,668 97	3,769 23	1,244,117 71
Total deductions,	\$19,340,787 74	\$51,700,516 32	\$82,174,791 53
Net income,	\$2,751,595 56	\$4,867,648 34	\$5,554,977 36
Income applied to sinking and other reserve funds,	—	\$76,774 41	—
Dividend appropriations of income,	—	—	—
Rate per cent,	—	—	—
Other deductions,	—	—	—
Total appropriations of income,	—	\$76,774 41	—
Surplus for the year,	\$2,751,595 56	\$4,790,873 93	\$5,554,977 36
Per cent of operating expenses to operating revenues,	62.86	69.07	67.60

¹ Operations of the New York Central Railroad, lessee.

The miles of track owned, and also track operated December 31, 1916, of the three leading railroads of the Commonwealth, are stated in detail in the following table:—

Miles of Track Owned and Operated December 31, 1916.

	Boston & Albany (Miles). ¹	Boston & Maine (Miles).	New York, New Haven & Hartford (Miles).
TRACK OWNED.			
Main line and branches,	303.63	731.34	1,234.41
Second track,	218.83	233.63	482.69
Third track,	84.40	—	67.88
Fourth track,	24.84	—	65.35
Side track,	379.23	411.77	859.66
Total track owned,	1,010.93	1,376.74	2,709.99
TRACK OPERATED.			
Main line and branches,	393.97	2,305.50	1,988.04
Second track,	218.83	591.11	810.71
Third track,	84.40	4.20	115.19
Fourth track,	24.84	1.98	112.60
Fifth and sixth track,	—	—	19.29
Side track,	406.74	1,345.09	1,495.72
Total track operated,	1,128.78	4,247.88	4,541.55

¹ Operated by the New York Central Railroad, lessee.

Revenues and Expenses per Mile of Road Operated.

The average operating revenues and expenses of operation, and net operating revenue per mile of road operated by all the companies for the past ten years and by the three leading companies for the last year, are shown in the following tables:—

Revenues and Expenses per Mile of Road Operated, 1908-1916.

YEARS.	Total Oper- ating Reve- nues.	Oper- ating Ex- penses.	Net Oper- ating Reve- nue.	YEARS.	Total Oper- ating Reve- nues.	Oper- ating Ex- penses.	Net Oper- ating Reve- nue.
1908,	\$21,602	\$16,450	\$5,152	1913,	\$27,301	\$19,897	\$7,403
1909,	21,979	15,258	6,721	1914,	27,229	20,772	6,457
1910,	24,668	16,850	7,818	1915,	25,222	18,070	7,152
1911,	25,207	18,205	7,002	1916,	29,039	19,713	9,326
1912,	25,978	18,140	7,838	1916, ¹	31,623	21,435	10,188

¹ Year ending December 31, 1916.

*Operating Revenues and Expenses per Mile of Road Operated (Three Roads)
in 1916.*

RAILROAD COMPANIES.	Total Operating Revenues.	Operating Expenses.	Net Operating Revenue.
Boston & Albany,	\$55,021	\$34,585	\$20,436
Boston & Maine,	24,022	16,591	7,431
New York, New Haven & Hartford,	40,458	27,350	13,108

Operating Revenues and Expenses per Revenue-Train Mile.

The average operating revenues and expenses of operation, and the net operating revenue, per total mile run by trains earning revenue, on all the roads, for each of the last ten years, are stated in the following table:—

Operating Revenues and Expenses per Total Revenue-Train Mile 1908–1916.

YEARS.	Total Operating Revenues.	Operating Ex- penses.	Net Operating Revenue.	YEARS.	Total Operating Revenues.	Operating Ex- penses.	Net Operating Revenue.
1908,	\$2.002	\$1.525	\$0.477	1913,	\$2.400	\$1.749	\$0.650
1909,	2.112	1.466	.646	1914,	2.483	1.894	.589
1910,	2.235	1.527	.708	1915,	2.656	1.903	.753
1911,	2.246	1.622	.624	1916,	2.911	1.976	.935
1912,	2.338	1.633	.705	1916, ¹	2.988	2.025	.963

¹ Year ending December 31, 1916.

*Operating Revenues and Expenses per Revenue-Train Mile (Three Roads)
in 1916.*

RAILROAD COMPANIES.	Gross Passenger Revenue per Passenger- Train Mile.	Gross Freight Revenue per Freight- Train Mile.	PER TOTAL REVENUE-TRAIN MILE.		
			Total Operating Revenues.	Operating Expenses.	Net Operating Revenue.
Boston & Albany,	\$2.003	\$3.025	\$2.693	\$1.693	\$1.000
Boston & Maine,	1.646	3.876	2.740	1.892	.848
New York, New Haven & Hart- ford.	2.360	4.951	3.459	2.338	1.121

The average gross passenger revenue per passenger-train mile and the gross freight revenue per freight-train mile, and the total operating revenues, expenses and net operating revenue per total revenue-train mile of the three leading railroads of the Commonwealth are given for the last year in the preceding table.

The ratio of operating expenses to operating revenues of the three leading railroads of the Commonwealth for the year ending December 31, 1916, is given in detail in the following table:—

Ratio of Operating Expenses to Operating Revenues (Three Roads) in 1916.

	Boston & Albany.	Boston & Maine.	New York, New Haven & Hartford.
Maintenance of way and structures,	8.84	11.07	11.16
Maintenance of equipment,	10.62	12.80	13.30
Traffic,	1.11	.78	.63
Transportation,	38.21	41.69	38.75
Miscellaneous operations,	1.90	.45	1.31
General expenses,	2.18	2.28	2.45
Total operating expenses,	62.86	69.07	67.60

Operating Expenses per Revenue-Train Mile (Three Roads) in 1916.

	Boston & Albany.	Boston & Maine.	New York, New Haven & Hartford.
Maintenance of way and structures,	\$0 24	\$0 31	\$0 39
Maintenance of equipment,	28	35	46
Traffic,	03	02	02
Transportation,	1 03	1 15	1 34
Miscellaneous operations,	05	01	04
General expenses,	06	06	09
Total operating expenses per revenue-train mile,	\$1 69	\$1 90	\$2 34

The next table gives the cost of repairs per locomotive and per car on each of the same three roads the last year:—

Cost of Repairs per Locomotive and per Car (Three Roads) in 1916.

RAILROAD COMPANIES.	Per Locomotive.	Per Passenger Car. ¹	Per Freight Car.
Boston & Albany,	\$2,650 41	\$645 57	\$48 08
Boston & Maine,	2,385 29	360 67	94 72
New York, New Haven & Hartford,	2,434 85	612 00	68 65

¹ Including baggage, express and postal cars.

VOLUME OF TRAFFIC.

Train Mileage.

The total number of miles run by passenger trains the last year, on the roads of all the companies, was 33,092,456 — an increase of 506,750 miles over the previous June 30, 1916; by freight trains, 20,945,755 — an increase of 1,286,350 miles; and by all other trains, 671,728 — an increase of 5,267 miles, making the total number of miles run by trains of all kinds, 54,709,939 — an increase of 1,798,367 miles over the previous June 30, 1916.

The mileage of passenger, freight and other trains, for each of the last ten years, is stated in the following table: —

Train Mileage for Ten Years, 1908–1916.

YEARS.	MILES RUN BY —			Total Train Mileage.
	Passenger Trains.	Freight Trains.	Other Trains.	
1908,	33,319,361	19,457,544	323,218	53,100,123
1909,	31,992,621	18,750,060	446,905	51,189,586
1910,	33,304,522	19,888,151	558,544	53,751,217
1911,	34,257,020	20,372,908	567,637	55,197,565
1912,	33,947,537	20,728,250	614,673	55,290,460
1913,	34,819,721	21,637,543	642,774	57,100,038
1914,	33,798,115	19,260,909	601,513	53,660,537
1915,	32,281,064	17,488,275	613,148	50,382,487
1916,	32,585,706	19,659,405	666,461	52,911,572
1916, ¹	33,092,456	20,945,755	671,728	54,709,939

¹ Year ending December 31, 1916.

NOTE. — The passenger and freight-train mileage for the years 1908 to 1914, inclusive, has been reclassified on the basis of actual passenger and freight-train miles in accordance with requirements of the 1915 report.

The next table shows the revenue-train mileage on each of the three leading railroads of the Commonwealth for the last year:—

Revenue-Train Mileage (Three Roads) in 1916.

RAILROAD COMPANIES.	MILES RUN BY —			Total Revenue-Train Mileage.
	Passenger Trains.	Freight Trains.	Mixed and Special Trains.	
Boston & Albany,	4,062,952	3,883,205	101,512	8,047,669
Boston & Maine,	11,393,952	8,435,148	286,570	20,115,670
New York, New Haven & Hartford,	15,381,532	7,657,643	211,657	23,250,832

Passenger Traffic.

The total number of passengers carried the last year was 166,771,603 — an increase of 8,742,635 passengers over the previous June 30. Each passenger on the steam roads travelled on the average a distance of 17.95 miles, making the total passenger mileage 2,994,012,001, an increase of 160,471,025 over the previous June 30.

The total volume of passenger traffic for each of the last ten years is shown in the following table:—

Passenger Mileage for Ten Years, 1908–1916.

YEARS.	Passengers Carried.	Average Journey (Miles).	Total Passenger Mileage.	Average Number of Passengers per Train Mile.
1908,	144,844,546	17.58	2,546,160,478	76
1909,	147,051,164	17.39	2,556,994,990	79
1910,	160,769,201	17.23	2,771,121,457	83
1911,	162,940,242	17.24	2,808,985,698	81
1912,	166,006,254	17.30	2,871,949,251	84
1913,	170,278,768	17.39	2,961,169,563	85
1914,	168,251,728	17.59	2,959,488,989	87
1915,	159,285,185	17.44	2,778,395,343	84
1916,	158,028,968	17.93	2,833,540,976	85
1916, ¹	166,771,603	17.95	2,994,012,001	89

¹ Year ending December 31, 1916.

The passenger mileage on the three leading railroads during the last year was as follows:—

Passenger Mileage (Three Roads) in 1916.

RAILROAD COMPANIES.	Passengers Carried.	Average Journey (Miles).	Total Passenger Mileage.	Average Number of Passengers per Train Mile.
Boston & Albany,	12,155,056	28.83	350,393,105	84
Boston & Maine,	45,257,134	18.78	849,858,643	73
New York, New Haven & Hartford,	86,183,575	19.15	1,650,474,867	106

Freight Traffic.

The total number of tons of freight hauled on all the roads the last year was 73,858,585 — an increase of 2,885,242 tons over the previous June 30. Each ton of freight was hauled on the average a distance of 102.87 miles, making the total freight mileage, 7,598,460,833 — an increase of 498,196,013 tons hauled one mile, over the previous June 30.

Freight Mileage for Ten Years, 1908–1916.

YEARS.	Tons of Freight Hauled.	Average Haul (Miles).	Total Freight Mileage.	Average Number of Tons of Freight per Train Mile.
1908,	47,251,460	99.25	4,689,724,439	238
1909,	49,259,397	97.51	4,803,498,797	253
1910,	55,786,434	97.41	5,433,908,081	273
1911,	56,557,644	97.85	5,534,064,740	268
1912,	59,288,347	98.57	5,843,933,729	277
1913,	63,729,052	101.09	6,442,438,763	293
1914,	60,661,003	99.66	6,045,226,122	308
1915,	59,637,608	99.14	5,912,684,341	327
1916,	70,973,343	100.04	7,100,264,820	350
1916, ¹	73,858,585	102.87	7,598,460,833	352

¹ Year ending December 31, 1916.

The preceding table gives the total volume of freight traffic for each of the last ten years.

The next table gives the freight mileage on the three leading roads for the last year: —

Freight Mileage (Three Roads) in 1916.

RAILROAD COMPANIES.	Tons of Freight Hauled.	Average Haul (Miles).	Total Freight Mileage.	Average Number of Tons of Freight per Train Mile.
Boston & Albany,	12,330,340	123.94	1,528,260,367	384
Boston & Maine,	27,795,096	114.83	3,191,615,905	368
New York, New Haven & Hartford,	29,379,039	87.40	2,567,831,016	327

FARES AND FREIGHTS.

Passenger Fares.

The average passenger fare per mile on the Massachusetts railroads for each of the last thirty years, as ascertained from the annual returns to the Commission, is given in the following table: —

Average Passenger Fare per Mile (All Massachusetts Roads) for 30 Years, 1888-1916.

YEARS.	Fares.	YEARS.	Fares.	YEARS.	Fares.
	Cents.		Cents.		Cents.
1888,	1.90	1898,	1.78	1908,	1.63
1889,	1.87	1899,	1.77	1909,	1.64
1890,	1.82	1900,	1.75	1910,	1.65
1891,	1.83	1901,	1.75	1911,	1.72
1892,	1.83	1902,	1.73	1912,	1.73
1893,	1.83	1903,	1.73	1913,	1.74
1894,	1.80	1904,	1.72	1914,	1.72
1895,	1.78	1905,	1.70	1915,	1.81
1896,	1.79	1906,	1.70	1916,	1.87
1897,	1.80	1907,	1.65	1916, ¹	1.87

¹ Year ending December 31, 1916.

The following table gives the average passenger fares per mile on the *three* leading Massachusetts railroads, taken singly and as a group, for the years 1900, 1908, and for each of the last four years, 1914 to 1916, inclusive: —

Average Passenger Fare per Mile (Three Roads) in 1900, 1908 and 1914-1916.

RAILROAD COMPANIES.	1900.	1908.	1914.	1915.	1916.	1916. ¹
	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.
Boston & Albany,	1.75	1.77	1.81	1.85	1.92	1.93
Boston & Maine,	1.73	1.71	1.77	1.82	1.85	1.86
New York, New Haven & Hartford, .	1.78	1.59	1.71	1.83	1.89	1.88
All companies,	1.75	1.65	1.74	1.83	1.88	1.88

¹ Year ending December 31, 1916.

Freight Rates.

In the tables which follow, the average rates per ton mile for the transportation of merchandise on the railroads making returns to the Commission are shown for the same years and intervals of years, for all of the roads and for the same group of roads, as in the preceding tables of passenger fares.

The first table gives the average freight rate per ton mile on all of the roads for each of the last thirty years:—

Average Freight Rate per Ton Mile (All Massachusetts Roads) for 30 Years, 1888-1916.

YEARS.	Rates.	YEARS.	Rates.	YEARS.	Rates.
	Cents.		Cents.		Cents.
1888,	1.55	1898,	1.22	1908,	1.17
1889,	1.50	1899,	1.18	1909,	1.19
1890,	1.45	1900,	1.22	1910,	1.18
1891,	1.42	1901,	1.20	1911,	1.17
1892,	1.36	1902,	1.24	1912,	1.17
1893,	1.39	1903,	1.23	1913,	1.13
1894,	1.33	1904,	1.27	1914,	1.16
1895,	1.28	1905,	1.14	1915,	1.18
1896,	1.28	1906,	1.23	1916,	1.18
1897,	1.25	1907,	1.19	1916, ¹	1.15

¹ Year ending December 31, 1916.

The decrease in the average rate per ton mile during the year ending December 31, 1916, was not due to a decrease in rates, for rates increased on the whole, but to a difference in

the character of freight handled and in the average length of haul.

The following table shows the average rate per ton mile on the *three* leading railroads of the Commonwealth, taken singly and as a group, in 1900, 1908, and for each of the last four years, 1914 to 1916, inclusive:—

Average Freight Rate per Ton Mile (Three Roads) in 1900, 1908 and 1914–1916.

RAILROAD COMPANIES.	1900.	1908.	1914.	1915.	1916.	1916. ¹
	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.
Boston & Albany,	0.82	0.87	0.82	0.81	0.81	0.79
Boston & Maine,	1.44	1.04	1.06	1.12	1.08	1.05
New York, New Haven & Hartford, .	1.45	1.42	1.42	1.43	1.53	1.51
All companies,	1.31	1.15	1.15	1.18	1.19	1.16

¹ Year ending December 31, 1916.

ROLLING STOCK.

The following table shows the amount of rolling stock (owned and leased) of all the companies, as returned at the end of each of the last seven years:—

Schedule of Rolling Stock, 1911–1916.

ROLLING STOCK.	1911.	1912.	1913.	1914.	1915.	1916.	1916. ¹
Locomotives,	2,879	2,830	3,020	2,984	2,984	2,891	2,945
Passenger cars,	4,249	4,449	4,172	4,179	3,758	3,852	4,075
Baggage, express and postal cars, .	763	805	789	794	904	871	897
Freight cars,	67,084	66,134	67,604	66,775	69,810	68,745	68,674
Gravel cars, etc.,	3,218	3,049	3,213	3,770	3,218	3,207	2,977

¹ Year ending December 31, 1916.

NUMBER OF EMPLOYEES.

The average number of persons employed during the year ending December 31, 1916, by all the railroad companies making returns to the Commission was 70,455—an increase of 1,154 over the previous year ending June 30, 1916. The following table gives the average number of employees for each of the last ten years:—

Average Number of Employees, 1908-1916.

YEARS.	Number of Employees.	YEARS.	Number of Employees.
1908,	67,435	1913,	73,661
1909,	64,725	1914,	71,676
1910,	69,798	1915,	65,178
1911,	70,719	1916,	69,301
1912,	70,862	1916, ¹	70,455

¹ Year ending December 31, 1916.

SUMMARY OF RAILROAD ACCIDENTS.

The number of persons killed and injured in the operation of railroads in Massachusetts during the year ended June 30, 1917, as reported by the several companies, together with the number reported in each of the preceding ten years, is shown by the following table: —

The total number of persons killed and injured during the year ended June 30, 1917, namely, 412, shows a decrease of 65 from the aggregate number reported for the preceding fiscal year, and a decrease of 320 from the average number reported annually for the preceding ten years. Of the total number of casualties, 284 were fatal, as against 264 reported for the year ended June 30, 1916, and as against 280, the average number of fatalities reported annually for the preceding ten years; while 128 were not fatal, as against 213 reported during the year ended June 30, 1916, and as against an average of 452 for the preceding ten-year period.

The percentage of passengers, employees, travellers on highway at grade crossings, and trespassers killed and injured during the year ended June 30, 1917, to the total number of casualties, is shown by the following table: —

	Killed.	Injured.	Total.
Passengers,	5.99	19.53	10.19
Employees,	27.11	28.13	27.42
Travellers on highway at grade crossings, . . .	9.15	15.63	11.17
Trespassers,	51.06	28.90	44.18
Other,	6.69	7.81	7.04
Total,	100.00	100.00	100.00

Passengers.

Seventeen passengers were killed, and 25 injured during the year. All the fatalities to passengers were reported to have occurred as the result of their own imprudence or negligence. Of the number of passengers injured, namely, 25, 9 were reported as injured from causes beyond their control, while 16 were reported as injured through their own imprudence or negligence. The total number of passengers killed and injured during the preceding year was 8 and 99 respectively; the average number of passengers killed and injured annually during the years 1907–1916 was 11 and 83 respectively.

The character of accidents to passengers during the year ended June 30, 1917, is shown by the following: —

CHARACTER OF ACCIDENT.	Killed.	Injured.
Collision,	-	9
Falling,	3	5
Crossing track,	6	1
Getting on or off trains, cars, etc.,	7	9
Side obstruction,	-	1
Other,	1	-
Total,	17	25

Employees.

During the year 77 employees were killed and 36 were injured, as against 64 killed and 52 injured during the preceding twelve months. The average number of employees killed and injured annually during the preceding ten years was 80 and 275, respectively.

The number of employees killed and injured during the year ended June 30, 1917, classified by character of employment, is shown by the following:—

CHARACTER OF EMPLOYMENT.	1916.		1917.	
	Killed.	Injured.	Killed.	Injured.
Enginemen and firemen,	1	5	7	9
Conductors and trainmen,	24	27	33	17
Trackmen and laborers,	19	7	15	3
Bridgemen,	-	-	1	-
Shopmen, storekeepers,	-	-	3	2
Signalmen, linemen,	1	1	1	1
Crossingmen,	5	-	7	-
Inspectors,	2	-	1	-
Machinists,	-	1	2	-
Freight handlers,	2	1	-	2
Yardmen,	1	3	-	-
Watchmen and janitors,	1	-	1	-
Engine-house men,	3	1	3	-
Car cleaners,	1	3	1	-
Carpenters, painters, masons,	3	1	1	1
Other,	1	2	1	1
Total,	64	52	77	36

The following table shows the character of accidents to employees during the year ended June 30, 1917: —

CHARACTER OF ACCIDENT.	1916.		1917.	
	Killed.	Injured.	Killed.	Injured.
Collision,	1	8	5	12
Derailment,	1	4	1	—
Overhead and side obstruction, .	5	5	5	4
Coupling and uncoupling, . .	1	5	6	2
Falling,	11	13	9	5
Engine accidents,	—	—	1	—
Walking on or crossing tracks, .	17	6	27	6
Getting on or off cars, trains, etc., .	5	4	2	3
Working on track,	17	4	16	2
Other,	6	3	5	2
Total,	64	52	77	36

Grade Crossings.

The number of travelers on highway killed at grade crossings during the year was 26, and the number injured 20, as against 20 killed and 14 injured during the preceding year.

Of the total number killed, 21 were killed at grade crossings protected by gates, flagmen or otherwise; 2 at unprotected crossings, and 3 at private crossings.

Of the total number injured, namely, 20, 15 were injured at protected crossings; 4 at unprotected crossings, and 1 at a private crossing.

The following table shows, for the year ended June 30, 1917, the number and character of accidents at grade crossings on the different railroads: —

Accidents at Grade Crossings during the Year ended June 30, 1917.

RAILROADS.	PROTECTED CROSSINGS.				UNPROTECTED CROSSINGS.				TOTAL.				AT PRIVATE CROSSINGS.	
	Num-ber.	Killed.	In- jured.	Ratio of Accidents to Crossings.	Num- ber.	Killed.	In- jured.	Ratio of Accidents to Crossings.	Num- ber.	Killed.	In- jured.	Ratio of Accidents to Crossings.	Killed.	In- jured.
Attleborough Branch,	-	-	-	-	15	-	-	-	15	-	-	-	-	-
Boston & Albany,	65	-	-	-	120	1	-	1 to 120	185	1	-	1 to 185	-	-
Boston & Maine,	508	11	1	1 to 42	201	1	3	1 to 50	709	12	4	1 to 44	3	-
Boston, Revere Beach & Lynn,	9	-	-	-	-	-	-	-	9	-	-	-	-	-
Grafton & Upton,	1	-	-	-	29	-	-	-	30	-	-	-	-	-
Hoosac Tunnel & Wilmington,	-	-	-	-	1	-	-	-	1	-	-	-	-	-
Nantucket,	3	1	1	1 to 2	-	-	-	-	3	1	1	1 to 2	-	-
New London Northern,	6	-	-	-	40	-	-	-	46	-	-	-	-	-
New York, New Haven & Hartford,	453	9	13	1 to 21	314	-	1	1 to 314	767	9	14	1 to 33	-	1
Totals for the year,	1,045	21	15	1 to 29	720	2	4	1 to 120	1,765	23	19	1 to 42	3 ¹	1 ¹
Totals for the year ending June 30, 1916,	1,063	12	6	1 to 59	714	3 ²	7 ³	1 to 71	1,777	15	13	1 to 63	5 ¹	1 ¹

¹ Unprotected.² Includes 1 person killed at crossing ordinarily protected, but unprotected at time of accident.³ Includes 1 person injured at crossing ordinarily protected, but unprotected at time of accident.

Note: The figures showing the number of crossings are for the year ended December 31, 1916, being the latest available.

Trespassers.

The total number of trespassers killed during the year ended June 30, 1917, was 145; the number of trespassers injured was 37. During the preceding year 158 trespassers were killed and 38 injured, while the average number killed and injured annually for the preceding ten years was 151 and 61 respectively.

The character of accidents to trespassers during the year ended June 30, 1917, is shown by the following:—

CHARACTER OF ACCIDENT.	Killed.	Injured.
Overhead or side obstruction,	7	3
Falling,	8	4
Walking on or crossing track,	128	22
Getting on or off cars, trains, etc.,	2	8
Total,	145	37

Other Persons.

Fifteen persons were reported killed and 9 injured during the year, classified as follows:—

	Killed.	Injured.
Employees not on duty,	7	3
Employees of contractors, consignees and consignors,	4	2
Employees of Pullman, express companies, etc.,	1	1
National Guardsmen,	3	3
Total,	15	9

In addition to the above, 4 persons were reported killed and 1 injured, whose proper classification in the reports of accidents was indeterminable.

RAILWAY STATISTICS.

Annual returns for the year ending December 31, 1916, have been received from fifty-three railway companies.

Returns have also been received from the receiver of the Norton & Taunton and the receivers of the Bristol County property (this property was sold to the Taunton & Pawtucket at a receivers' sale in 1904).

OPERATION OF COMPANIES.

There were at the end of the year fifty-three existing companies; of this number, thirty-eight operated their railway and fifteen were operated under lease or contracts by other companies.

RAILWAY MILEAGE.

New Mileage.

There was an increase during the past year in the mileage of the Massachusetts companies of 9.551 miles of street railway line, and an increase of 2.774 miles of second track, making a total increase of 12.325 miles of main track. There was also an increase of 1.008 miles of side track, making a total increase of 13.333 miles reckoned as single track.

Mileage Owned.

The Massachusetts companies now own 2,357.493 miles of street railway line, 528.727 miles of second main track and 195.882 miles of side track, making the total length of track owned, reckoned as single track, 3,082.102 miles. All the track owned is surface street railway track, with the exception of 13.974 miles of elevated line and 13.754 miles of elevated second track. Of the sidings, all are surface track, with the exception of 9.719 miles of elevated track. All the elevated track is located in the cities of Boston and Cambridge.

Mileage Operated.

The total miles of main track (including trackage rights) operated was 2,981.997, — an increase of 4.252 miles over the previous June 30.

The Bay State leases and operates the Nashua, located in New Hampshire, and the Newport and Fall River, located in Rhode Island, having a total mileage of 38.930 miles of main and second track. The Berkshire leases and operates The Vermont Company, having a mileage of main and second track of 26.950 miles, located in Vermont. The Massachusetts Northeastern owns, leases and operates 43.810 miles of main and second track, located in New Hampshire. Accordingly, 109.690 miles of main and second track are operated outside of this Commonwealth.

STATISTICS.

The following compilations of statistics are from the returns of the several street railway companies to the Commission for the year ending December 31, 1916.

The following table gives the length of railway line and track and total reckoned as single track returned by the companies for the year ending December 31, 1916, as compared with the previous June 30: —

Street Railway Mileage Owned, June 30 and December 31, 1916.

MILEAGE OWNED.	June 30, 1916.	December 31, 1916.	Increase.
	Miles.	Miles.	Miles.
Length of railway line,	2,347.942	2,357.493	9.551
Length of second track,	525.953	528.727	2.774
Total length of main line,	2,873.895	2,886.220	12.325
Length of side track,	194.874	195.882	1.008
Total reckoned as single track,	3,068.769	3,032.102	13.333

COMPARATIVE GENERAL BALANCE SHEET.

In any examination for purposes of comparison between the report here following and reports prior to 1914, it must be distinctly understood that by reason of the adoption by the Commission, under authority of law, of the form of return prescribed by the Interstate Commerce Commission, the return

now adopted differs substantially in principle from the return formerly in use under authority of the Commission. The assets and liabilities in the comparative general balance sheet of the companies, as returned December 31, 1916, have been tabulated and the increase or decrease in each class as compared with 1915 appears in the two following tables:—

Assets, December 31, 1915 and 1916.

ASSETS.	1915.	1916.	Increase.
Cost of railway,	—	\$116,141,887 45	—
Cost of equipment,	—	38,783,683 80	—
Cost of land, buildings, etc.,	—	49,853,256 33	—
Cost of other permanent investments,	—	1,803,612 78	—
Total cost of permanent investments,	\$203,340,200 98	\$206,582,440 36	\$3,242,239 38
Sinking funds,	227,122 89	246,331 65	19,208 76
Miscellaneous physical property,	1,482,492 08	1,330,691 72	151,800 36*
Investments,	2,435,162 46	2,989,600 23	554,437 77
Current assets,	13,232,890 55	13,228,230 16	4,660 39*
Deferred assets,	1,044,664 37	1,040,599 03	4,065 34*
Unadjusted debits,	3,324,146 20	3,890,655 93	566,509 73
Grand total,	\$225,086,679 53	\$229,308,549 08	\$4,221,869 55

* Decrease.

Liabilities, December 31, 1915 and 1916.

LIABILITIES.	1915.	1916.	Increase.
Capital stock, common,	\$88,253,475 00	\$91,037,875 00	\$2,784,400 00
Capital stock, preferred,	10,747,800 00	11,543,500 00	795,700 00
Total capital stock,	\$99,001,275 00	\$102,581,375 00	\$3,580,100 00
Stock liability for conversion,	—	—	—
Premium on capital stock,	6,564,951 54	6,659,611 54	94,660 00
Funded debt,	90,861,200 00	91,761,700 00	900,500 00
Non-negotiable debt to affiliated companies,	1,234,954 64	1,241,215 44	6,260 80
Current liabilities,	21,576,358 66	20,451,711 00	1,124,647 66*
Deferred liabilities,	421,499 76	431,697 19	10,197 43
Unadjusted credits,	4,972,766 63	5,673,592 65	700,826 02
Appropriated surplus,	270,304 80	269,345 57	959 23*
Profit and loss,	183,368 50	238,300 69	54,932 19
Grand total,	\$225,086,679 53	\$229,308,549 08	\$4,221,869 55

* Decrease.

The gross assets, the gross liabilities (including capital stock) and the surplus of the companies, with the percentage of surplus to capital stock, at the end of each of the last nine years and of the nine months ending June 30, 1910, are shown in the following table: —

Gross Assets, Liabilities and Surplus, 1908-1916.

YEARS.	Gross Assets.	Gross Liabilities.	Surplus.	Percent- age of Surplus to Capital.
1908,	\$170,154,909	\$162,034,970	\$8,119,939 ¹	10.85
1909,	177,745,988	168,628,151	9,117,837 ¹	11.29
1910, ²	185,456,188	175,470,489	9,985,699 ¹	11.84
1911,	191,791,508	180,368,094	11,423,414 ¹	13.19
1912,	205,065,129	193,660,069	11,405,060 ¹	12.80
1913,	216,022,752	205,149,783	10,872,969 ¹	11.18
1914,	217,960,080	206,974,502	10,985,578 ¹	11.19
1915,	221,543,802	221,418,356	125,446 ³	.12
1916,	226,693,589	226,762,084	68,495 ^d	.07^d
1916, ⁴	229,308,549	229,070,248	238,301	.23

¹ Includes "premiums on sales of stock and bonds" and "sinking and other special funds."

² For nine months ending June 30, 1910.

³ The apparent discrepancy in the surplus for the year 1915 is due to a change in the classification of accounts. Premiums on sales of stock and bonds and sinking and other special funds now appear in separate accounts.

⁴ Year ending December 31, 1916.

^d Deficit.

CAPITAL STOCK AND DIVIDENDS.

The aggregate capital stock of the fifty-three companies, December 31, 1916, was \$102,581,375, — an increase of \$3,580,100 over the preceding year.

Dividends.

The total amount of dividends declared the past year was \$4,082,535.74.

Thirty-four corporations declared dividends varying in rate from $\frac{1}{4}$ to 10 per cent; the following table gives the name of the dividend paying companies, the rate per cent, and amount of dividend declared: —

NAME OF COMPANY.	RATE PER CENT.		Amount of Dividend Declared.
	Common.	Preferred.	
Bay State,	$\frac{1}{4}$	6	\$227,244 50
Boston & Chelsea,	6	-	7,260 00
Boston Elevated,	5	-	1,193,970 00
Boston & Revere Electric,	5	-	2,500 00
Boston & Worcester,	$3\frac{3}{4}$	6	100,369 50
Brockton & Plymouth,	-	3	3,300 00
Concord, Maynard & Hudson,	4	-	9,400 00
Connecticut Valley,	1	6	12,196 00
East Middlesex,	10	-	29,770 00
East Taunton,	5	-	4,390 00
Fitchburg & Leominster,	6	-	27,000 00
Holyoke,	6	-	80,520 00
Linwood,	6	-	720 00
Lowell & Fitchburg,	2	-	5,500 00
Massachusetts Northeastern,	-	$4\frac{1}{2}$	29,925 00
Medway & Dedham,	$4\frac{1}{2}$	-	2,925 00
Middlesex & Boston,	$4\frac{1}{4}$	-	52,158 75
Milford & Uxbridge,	5	6	28,000 00
Mount Tom,	6	-	6,000 00
Nahant & Lynn,	5	-	5,000 00
Newtonville & Watertown,	$7\frac{2}{100}$	-	3,600 00
Northampton,	5	-	42,500 00
North End,	$3\frac{3}{4}$	-	4,125 00
Northern Massachusetts,	-	6	9,000 00
Shelburne Falls & Colrain,	5	-	2,500 00
Somerville,	6	-	9,180 00
Springfield,	$5\frac{1}{4}$	-	244,371 75
Union,	8	-	130,000 00
Webster & Dudley,	5	-	2,500 00
West End,	7	8	1,453,160 50
Winnisimmet,	6	-	3,000 00
Worcester Consolidated,	5	-	346,300 00
Worcester & Shrewsbury Railroad,	$7\frac{2}{100}$	-	2,649 74
Worcester & Shrewsbury Street Railway,	5	-	1,000 00
			\$4,082,535 74

Capital Stock, Net Income and Dividends, 1908-1916.

YEARS.	Capital Stock.	Net Divisible Income.	Dividends Declared.	Percent- age on Total Capital Stock.
1908,	\$74,737,505	\$4,094,977	£3,950,965	5.29
1909,	80,728,880	4,527,547	4,120,223	5.10
1910, ¹	84,345,065	2,600,375	2,767,315	3.28
1911,	86,639,175	5,548,479	4,788,907	5.52
1912,	89,118,975	4,975,801	4,916,371	5.52
1913,	97,284,375	4,901,291	5,031,728	5.17
1914,	98,194,775	5,208,407	5,109,369	5.20
1915,	99,031,275	4,564,342	4,612,020	4.66
1916,	102,493,675	4,251,258	4,080,572	3.98
1916, ²	102,581,375	4,504,681	4,082,536	3.98

¹ For nine months ending June 30, 1910.² Year ending December 31, 1916.

FUNDED AND FLOATING DEBT.

The funded debt of the companies, December 31, 1916, was \$91,761,700, — an increase of \$900,500 over the preceding year.

Floating Debt.

The total unfunded debt was \$27,798,216.28, — a decrease of \$407,363.41.

The gross debt, funded and unfunded, was \$119,559,916.28, — an increase of \$493,136.59.

The net debt (the gross debt less \$13,228,230.16 of cash and current assets) was \$106,331,686.12, — an increase of \$497,796.98.

The funded debt, unfunded debt, gross debt, cash and current assets, and net debt, at the end of each of the last nine years and of the nine months ending June 30, 1910, are shown in the following table:—

Funded, Unfunded, Gross and Net Debt, 1908-1916.

YEARS.	Funded Debt.	Unfunded Debt.	Gross Debt.	Cash and Current Assets.	Net Debt. ¹
1908,	\$66,348,500	\$20,948,965	\$87,297,465	\$8,170,683	\$79,126,782
1909,	68,078,000	19,821,271	87,899,271	11,959,339	75,939,932
1910, ²	67,762,000	23,363,424	91,125,424	8,785,108	82,340,316
1911,	71,508,700	22,220,219	93,728,919	8,231,929	85,496,990
1912,	77,706,700	26,834,394	104,541,094	7,939,172	96,601,922
1913,	85,615,700	22,249,708	107,865,408	10,795,460	97,069,948
1914,	86,575,700	22,204,027	108,779,727	8,189,039	100,590,688
1915,	87,717,700	27,810,729	115,528,429	11,153,352	104,375,077
1916,	91,834,700	25,512,685	117,347,385	13,141,327	104,206,058
1916, ³	91,761,700	27,798,216	119,559,916	13,228,230	106,331,686

¹ Gross debt less cash and current assets.³ Year ending December 31, 1916.² For nine months ending June 30, 1910.

Capital Investment.

The total capital investment (capital stock, premiums and funded debt) of the street railway companies of the state on December 31, 1916, was \$201,002,686.54, — an increase of \$4,575,260 for the year.

COST AND CAPITAL INVESTMENT PER MILE.

The following table shows the cost per mile of main track (including the cost but not the length of side track) of road, equipment, land and buildings and other property of each of the fifty-three street railways for the year ending December 31, 1916: —

Cost and Capitalization per Mile of Main Track (including First and Second Tracks).

RAILWAY COMPANIES.	Road.	Equip- ment.	Land and Build- ings.	Other Prop- erty.	Total.	Capital- ization per Mile of Main Track.
Bay State,	\$31,543	\$11,475	\$10,922	\$462	\$54,402	\$55,694
Berkshire,	57,409	6,192	16,409	425	80,435	55,988
Blue Hill,	22,551	7,260	5,846	—	35,657	29,730
Boston & Chelsea,	27,689	—	—	—	27,689	27,689
Boston Elevated,	821,768	95,412	357,442	5,472	1,280,094	1,321,183
Boston & Revere Electric, .	19,528	2,624	6,650	—	28,802	26,455
Boston & Worcester, . . .	42,978	9,899	11,931	—	64,808	62,993
Bristol & Norfolk,	19,943	3,618	1,076	1,620	26,257	27,441
Brockton & Plymouth, . .	17,824	4,810	10,351	1,281	34,266	30,163
Concord, Maynard & Hudson, .	18,202	5,163	6,488	—	29,853	26,102
Connecticut Valley,	20,920	5,107	2,690	100	28,817	26,746
Conway Electric,	12,648	2,919	23,824	—	39,391	33,841
East Middlesex,	17,805	5,276	3,032	11	26,124	26,755
East Taunton,	14,047	2,936	1,081	—	18,064	13,569
Fitchburg & Leominster, . .	23,048	6,805	7,881	2,992	40,726	21,778
Holyoke,	20,281	10,248	14,181	1,147	45,857	42,750
Interstate Consolidated, . .	19,975	30	2,674	—	22,679	11,411
Linwood,	16,388	34,412	—	—	50,800	16,000
Lowell & Fitchburg,	30,715	2,962	1,729	—	35,406	31,197
Martha's Vineyard,	4,655	11,512	4,553	—	20,720	7,272
Massachusetts Northeastern, .	19,927	5,291	2,683	1,431	29,332	26,512

Cost and Capitalization per Mile of Main Track, etc. — Concluded.

RAILWAY COMPANIES.	Road.	Equip- ment.	Land and Build- ings.	Other Prop- erty.	Total.	Capital- ization per Mile of Main Track.
Medway & Dedham,	\$2,391	\$530	\$240	—	\$3,221	\$3,221
Middlesex & Boston,	23,217	10,142	7,055	—	40,414	33,016
Milford, Attleborough & Woon- socket.	14,194	3,814	3,144	\$1,004	22,156	21,549
Milford & Uxbridge,	17,944	6,788	6,845	872	32,449	30,219
Mount Tom,	64,685	5,444	39,982	—	110,111	111,111
Nahant & Lynn,	32,685	9,404	4,928	—	47,017	31,056
New Bedford & Onset,	18,379	2,924	5,295	1,057	27,655	23,891
Newtonville & Watertown, . .	25,034	—	—	—	25,034	11,545
Norfolk & Bristol,	14,047	4,515	4,962	—	23,524	19,825
Northampton,	18,603	9,293	8,028	101	36,025	35,303
North End,	20,116	10,281	2,738	—	33,135	22,022
Northern Massachusetts, . . .	17,970	5,364	2,976	946	27,256	22,271
Norton & Taunton,	17,536	21	2,385	—	19,942	20,715
Norwood, Canton & Sharon, . .	8,097	1,712	654	—	10,463	10,291
Oak Bluffs,	7,841	—	—	40	7,881	9,506
Plymouth & Sandwich,	22,662	772	1,134	76	22,644	8,554
Point Shirley,	11,083	3,877	2,458	—	17,418	20,833
Providence & Fall River, . . .	23,635	9,692	4,511	—	37,838	32,702
Shelburne Falls & Colrain, . .	15,459	3,121	4,487	—	23,067	20,964
Somerville,	19,666	—	—	—	19,666	19,666
Springfield,	27,461	9,386	8,970	286	46,103	41,207
Taunton & Pawtucket,	12,170	4,925	3,303	—	20,398	18,239
Union,	24,202	11,814	19,545	2,544	58,105	45,495
Ware & Brookfield,	12,647	2,262	1,879	—	16,788	20,675
Webster & Dudley,	24,025	2,429	1,512	—	27,966	14,981
West End,	38,297	35,031	33,194	802	107,324	111,448
Winnisimmet,	24,038	24	—	—	24,062	24,038
Worcester Consolidated,	28,223	11,862	13,008	318	53,411	50,311
Worcester & Shrewsbury Rail- road.	26,223	19,523	—	—	45,746	21,787
Worcester & Shrewsbury Street Railway.	27,529	19,530	—	—	47,059	47,059
Worcester & Warren,	6,394	700	1,326	627	9,047	8,599
Worcester & Webster,	17,775	5,804	8,736	—	32,315	19,544
Average, 53 railways,	\$40,240	\$13,437	\$17,273	\$625	\$71,575	\$69,642
Average, excluding Boston Ele- vated.	\$29,162	\$12,275	\$12,451	\$556	\$54,444	\$51,901

The average cost of the street railways of the state, per mile of main track (including the cost but not the length of side track), as returned by the companies December 31, 1916, was \$40,240.13 for construction; \$13,437.54 for equipment; and \$17,897.76 for lands, buildings (including power plants), parks and other permanent property, — making a total average cost of \$71,575.43 per mile of main track.

The following table gives the average cost, classified as above, and also the average capital investment (amount of outstanding capital stock, premiums and funded debt), per mile of main track, as returned by all of the companies at the end of each of the last nine years and of the nine months ending June 30, 1910: —

Cost and Capital Investment per Mile of Main Track, 1908–1916.

YEARS.	Construc- tion.	Equip- ment.	Other Permanent Property. ¹	Total Cost per Mile.	Capital Invest- ment per Mile.
1908,	\$31,005	\$11,103	\$15,569	\$57,677	\$52,745
1909,	31,747	11,076	15,757	58,580	55,409
1910, ²	32,484	11,654	17,594	61,732	56,279
1911,	36,216	11,760	16,250	64,226	58,126
1912,	37,350	12,287	18,866	68,503	60,793
1913,	37,294	12,270	19,317	68,881	63,872
1914,	37,882	13,112	19,652	70,646	64,534
1915,	39,895	13,370	17,639	70,904	66,980
1916,	40,220	13,413	17,767	71,400	69,935
1916, ³	40,240	13,437	17,898	71,575	69,642

¹ Chiefly lands, parks, buildings and power plants.

² For nine months ending June 30, 1910.

³ Year ending December 31, 1916.

INCOME AND EXPENDITURES.

The total income of the companies from all sources for the year ending December 31, 1916, was \$46,019,320.13, and the total expenditures (including dividends declared) for the same period were \$45,597,175.32, — making a net surplus of \$422,144.81 to be added to the surplus of previous years.

The sources of total income, and the amount derived from each source as compared with June 30, are shown in the following table: —

Total Income, June 30 and December 31, 1916.

INCOME.	June 30, 1916.	December 31, 1916.	Increase.
Total operating revenues,	\$41,479,275 43	\$43,150,200 64	\$1,670,925 21
Net revenue from auxiliary operations,	143,064 39	140,691 31	2,373 08*
Income from lease of road,	2,483,246 47	2,511,871 36	28,624 89
Miscellaneous nonoperating income,	161,332 24	216,556 82	55,224 58
Gross income,	\$44,266,918 53	\$46,019,320 13	\$1,752,401 60

* Decrease.

The items of total expenditure, with the increase and decrease in each item over the previous June 30, are shown in the following table:—

Total Expenditures, June 30 and December 31, 1916.

EXPENDITURES.	June 30, 1916.	December 31, 1916.	Increase.
Total operating expenses,	\$29,348,990 09	\$30,753,332 82	\$1,404,342 73
Taxes,	2,388,118 34	2,406,004 13	17,885 79
Rents of leased roads,	2,860,024 36	2,873,020 31	12,995 95
Interest on debt and loans,	4,610,596 87	4,621,669 81	11,072 94
Amortization of discount on funded debt,	29,915 64	33,329 64	3,414 00
Maintenance of organization,	9,460 35	9,388 06	72 29*
Miscellaneous debits,	768,554 80	817,894 81	49,340 01
Dividends declared,	4,080,572 49	4,082,535 74	1,963 25
Total expenditures,	\$44,096,232 94	\$45,597,175 32	\$1,500,942 38
Surplus for the year,	\$170,685 59	\$422,144 81	\$251,459 22

* Decrease.

EARNINGS AND EXPENSES OF OPERATION.

The gross earnings and expenses of operation the last year are classified and compared with those of the previous June 30 in the following table:—

Operating Revenues and Expenses, June 30 and December 31, 1916.

REVENUES AND EXPENSES.	June 30, 1916.	December 31, 1916.	Increase.
Passenger revenue,	\$39,444,660 83	\$40,905,355 79	\$1,460,694 96
Parlor and special car revenue,	113,464 69	123,644 28	10,179 59
Mail,	46,233 44	57,428 34	11,194 90
Express, baggage and freight,	921,900 87	1,001,013 77	79,112 90
Milk,	22,301 80	22,569 87	268 07
Miscellaneous transportation revenue,	20,127 12	18,499 37	1,627 75*
Total revenue from operations other than transportation,	910,586 68	1,021,689 22	111,102 54
Total operating revenues,	\$41,479,275 43	\$43,150,200 64	\$1,670,925 21
Operating expenses,	29,348,990 09	30,753,332 82	1,404,242 73
Net operating revenue,	\$12,130,285 34	\$12,396,867 82	\$266,582 48

* Decrease.

The following table gives the gross earnings from operation, the operating expenses, the ratio of operating expenses to gross earnings, and the net earnings for each of the last nine years and for the nine months ending June 30, 1910:—

Ratio of Operating Expenses to Gross Earnings, 1908-1916.

YEARS.	Gross Earnings from Operation.	Operating Expenses.	Ratio of Operating Expenses to Operating Revenues.	Net Earnings.
1908,	\$30,780,962	\$20,541,577	66.73	\$10,239,385
1909,	31,956,007	20,915,728	65.45	11,040,279
1910, ¹	24,032,236	16,191,893	67.38	7,840,343
1911,	35,036,997	22,895,804	65.34	12,141,193
1912,	36,080,237	24,363,903	67.53	11,716,334
1913,	38,125,693	25,729,054	67.48	12,396,639
1914,	39,703,706	26,665,220	67.16	13,038,486
1915,	39,537,443	27,194,899	68.78	12,342,544
1916,	41,479,275	29,348,990	70.75	12,130,285
1916, ²	43,150,201	30,753,333	71.27	12,396,868

¹ For nine months ending June 30, 1910.

² Year ending December 31, 1916.

The following table gives the ratio of operating expenses (divided into the general operating accounts) to the operating revenues for the year ending December 31, 1916:—

RAILWAY COMPANIES.	Way and Structures (Per Cent).	Equipment (Per Cent).	Power (Per Cent).	Transportation (Per Cent).	Traffic (Per Cent).	General and Miscellaneous (Per Cent).	Total (Per Cent).
Bay State,	11.63	9.99	9.98	32.62	.55	12.64	77.41
Berkshire,	14.27	9.92	19.14	26.60	.24	5.90	76.07
Blue Hill,	9.82	8.17	19.04	25.28	-	14.33	76.64
Boston Elevated,	8.92	7.33	6.94	32.42	.12	9.88	65.61
Boston & Worcester,	9.32	10.24	12.72	24.54	.84	10.07	67.73
Bristol & Norfolk,	7.39	15.38	29.51	34.21	4.58	16.37	107.44
Brockton & Plymouth,	9.28	13.06	20.24	27.48	2.02	12.18	84.26
Concord, Maynard & Hudson,	8.01	10.57	21.91	20.16	.20	8.64	69.49
Connecticut Valley,	6.00.	8.50	27.12	21.19	.49	9.99	73.29

RAILWAY COMPANIES.	Way and Structures (Per Cent).	Equipment (Per Cent).	Power (Per Cent).	Transportation (Per Cent).	Traffic (Per Cent).	General and Miscellaneous (Per Cent).	Total (Per Cent).
Conway Electric,	16.98	8.65	14.47	36.93	-	4.63	81.66
East Taunton,	12.21	7.92	21.98	16.29	-	12.39	70.79
Fitchburg & Leominster, . . .	10.57	8.85	13.62	24.90	.79†	10.00	67.15
Holyoke,	9.09	8.03	11.40	27.33	2.33†	17.36	70.88
Interstate Consolidated, . . .	6.54	.06	22.75	35.08	.16	22.09	86.68
Linwood,	1.69	10.20	14.33	33.37	-	17.12	76.71
Lowell & Fitchburg,	8.13	6.82	20.55	19.82	.27	7.09	62.68
Massachusetts Northeastern, . .	12.19	8.25	22.86	24.60	.62	10.21	78.73
Middlesex & Boston,	10.04	8.56	18.16	30.20	.10	9.57	76.63
Milford, Attleborough & Woonsocket,	9.68	9.78	21.04	31.88	.23	12.29	84.90
Milford & Uxbridge,	8.55	6.73	23.10	26.47	.98	8.13	73.96
Nahant & Lynn,	5.67	7.95	11.46	23.38	1.04	24.78	74.28
New Bedford & Onset,	16.04	9.67	29.89	21.01	.24	6.53	83.38
Norfolk & Bristol,	7.65	8.66	15.60	25.93	.08	15.26	73.18
Northampton,	12.13	7.11	11.77	23.31	.02	10.50	64.84
Northern Massachusetts, . . .	15.36	10.13	25.01	24.16	.90	13.12	88.68
Norton & Taunton (receiver), . .	21.64	5.33	22.38	27.43	.01	23.17	99.96
Norwood, Canton & Sharon, . . .	31.04	19.84	31.31	40.67	.30	19.72	142.88
Oak Bluffs,	7.92	15.88	24.50	33.50	.71	36.94	119.45
Plymouth & Sandwich,	9.43	12.16	21.97	29.36	.25	23.02	96.19
Point Shirley,	15.44	8.98	49.06	50.04	-	4.02	127.54
Providence & Fall River,	12.53	15.74	20.52	23.08	-	9.02	80.89
Shelburne Falls & Colrain, . . .	10.06	4.27	14.33	19.86	-	12.62	61.14
Springfield,	8.59	10.10	13.28	35.82	.28	12.56	80.63
Bristol County property (receiver), . .	11.64	17.11	35.49	19.91	5.13	11.94	101.22
Union,	10.71	5.72	12.59	29.12	1.17	9.82	69.13
Ware & Brookfield,	30.03	23.59	34.86	36.70	-	13.67	138.85
Worcester Consolidated,	9.51	9.63	11.71	27.47	.35	10.59	69.26
Worcester & Warren,	8.67	14.56	29.31	28.56	4.95	9.43	95.48
Average,	9.96	8.50	10.42	31.21	.28	10.90	71.27

† Credit.

The following table gives for each of the last nine years and for the nine months ending June 30, 1910, the average gross earnings, operating expenses, and net earnings from operation per total mile of main track owned:—

*Gross and Net Earnings from Operation per Mile of Main Track Owned,
1908-1916.*

YEARS.	AVERAGE PER MILE OF TRACK OWNED.		
	Gross Earnings.	Expenses of Operation.	Net Earnings.
1908,	\$11,507	\$7,679	\$3,828
1909,	11,899	7,788	4,111
1910, ¹	8,892	5,991	2,901
1911,	12,877	8,415	4,462
1912,	13,148	8,878	4,270
1913,	13,461	9,084	4,377
1914,	14,017	9,414	4,603
1915,	13,839	9,519	4,320
1916,	14,433	10,212	4,221
1916, ²	14,950	10,655	4,295

¹ For nine months ending June 30, 1910.

² Year ending December 31, 1916.

The following table gives the cost of operating expenses (divided into the general operating accounts) per car mile. The cost of power per car mile is based on the actual cost of power less power sold.

RAILWAY COMPANIES.	Way and Structures (Cents).	Equipment (Cents).	Power (Cents).	Transportation (Cents).	Traffic (Cents).	General and Miscel- laneous (Cents).	Total (Cents).
Bay State,	3.65	3.14	3.04	10.24	.17	3.97	24.21
Berkshire,	3.92	2.73	4.28	7.31	.07	1.62	19.93
Blue Hill,	2.55	2.12	4.07	6.57	-	3.72	19.03
Boston Elevated,	2.91	2.39	2.18	10.57	.04	3.22	21.31
Boston & Worcester,	3.40	3.74	4.65	8.96	.31	3.68	24.74
Bristol & Norfolk,	1.42	2.95	5.66	6.56	.87	3.14	20.60
Brockton & Plymouth,	2.40	3.39	4.76	7.12	.52	3.16	21.35
Concord, Maynard & Hudson,	2.41	3.18	6.59	6.06	.06	2.60	20.90
Connecticut Valley,	1.72	2.43	7.76	6.06	.14	2.86	20.97
Conway Electric,	4.43	2.26	.98	9.64	-	1.21	18.52
East Taunton,	3.63	2.36	6.54	4.85	-	3.68	21.06

RAILWAY COMPANIES.	Way and Structures (Cents).	Equipment (Cents).	Power (Cents).	Transportation (Cents).	Traffic (Cents).	General and Miscel- laneous (Cents).	Total (Cents).
Fitchburg & Leominster, . . .	3.28	2.75	4.18	7.74	.25†	3.11	20.81
Holyoke,	2.80	2.47	3.51	8.41	.72†	5.34	21.81
Interstate Consolidated, . . .	1.70	.01	5.92	9.13	.04	5.75	22.55
Linwood, . . . . .	.57	3.47	4.87	11.35	—	5.82	26.08
Lowell & Fitchburg, . . .	2.13	1.79	5.39	5.20	.07	1.86	16.44
Massachusetts Northeastern, . .	3.50	2.37	6.39	7.05	.18	2.93	22.42
Middlesex & Boston, . . .	2.74	2.33	4.83	8.24	.02	2.61	20.77
Milford, Attleborough & Woon- socket.	2.40	2.43	5.22	7.91	.06	3.05	21.07
Milford & Uxbridge, . . .	2.36	1.85	4.22	7.29	.27	2.24	18.23
Nahant & Lynn,	2.09	2.93	4.22	8.61	.38	9.13	27.36
New Bedford & Onset, . . .	5.52	3.33	5.00	7.23	.08	2.25	23.41
Norfolk & Bristol,	1.65	1.87	3.37	5.61	.02	3.30	15.82
Northampton,	3.56	2.09	3.46	6.85	.01	3.08	19.05
Northern Massachusetts, . . .	4.27	2.82	6.95	6.72	.25	3.64	24.65
Norton & Taunton (receiver), .	4.30	1.06	4.31	5.46	—	4.61	19.74
Norwood, Canton & Sharon, . .	5.20	3.33	5.25	6.82	.05	3.31	23.96
Oak Bluffs,	4.61	9.25	14.27	19.50	.41	21.50	69.54
Plymouth & Sandwich, . . .	2.05	2.64	4.77	6.38	.06	4.99	20.89
Point Shirley,	4.44	2.59	14.12	14.40	—	1.16	36.71
Providence & Fall River, . . .	3.83	4.81	6.27	7.05	—	2.76	24.72
Shelburne Falls & Colrain, . . .	4.31	1.83	5.70	8.50	—	5.40	25.74
Springfield,	2.34	2.75	3.53	9.75	.08	3.42	21.87
Bristol County property (receiver),	2.44	3.59	7.45	4.18	1.08	2.51	21.25
Union,	3.99	2.13	4.56	10.86	.44	3.66	25.64
Ware & Brookfield,	6.28	4.94	7.30	7.68	—	2.86	29.06
Worcester Consolidated, . . .	3.20	3.24	3.86	9.23	.12	3.56	23.21
Worcester & Warren,	1.50	2.51	5.06	4.94	.85	1.63	16.49
Average,	3.13	2.67	3.13	9.81	.09	3.43	22.26

† Credit.

The following table gives the operating revenue per mile of all track operated and the amount invested per dollar of operating revenue:—

RAILWAY COMPANIES.	Operating Revenues per Mile of Track Operated (All Track).	Amount Invested per Dollar of Operating Revenue.
Bay State,	\$10,564 24	\$4 71
Berkshire,	6,172 90	10 20
Blue Hill,	4,650 26	7 10
Boston Elevated,	37,143 91	4 76
Boston & Worcester,	9,892 47	6 31
Bristol & Norfolk,	2,319 08	10 47
Brockton & Plymouth,	4,949 02	6 17
Concord, Maynard & Hudson,	4,290 49	6 54
Connecticut Valley,	5,091 53	5 38
Conway Electric,	1,674 19	21 39
East Taunton,	4,358 76	3 82
Fitchburg & Leominster,	8,397 70	4 59
Holyoke,	9,612 89	4 49
Interstate Consolidated,	7,196 77	2 91
Linwood,	9,403 15	1 78
Lowell & Fitchburg,	3,237 70	10 71
Massachusetts Northeastern,	5,901 92	4 62
Middlesex & Boston,	8,067 59	4 62
Milford, Attleborough & Woonsocket,	3,597 88	5 91
Milford & Uxbridge,	4,919 33	4 27
Nahant & Lynn,	7,787 04	5 72
New Bedford & Onset,	4,006 77	6 43
Norfolk & Bristol,	4,437 59	4 86
Northampton,	8,295 81	3 85
Northern Massachusetts,	4,726 48	5 41
Norton & Taunton (receiver),	3,331 30	8 79
Norwood, Canton & Sharon,	1,794 97	5 64
Oak Bluffs,	826 20	14 58
Plymouth & Sandwich,	1,218 41	49 91
Point Shirley,	7,344 71	2 37
Providence & Fall River,	4,977 74	7 16
Shelburne Falls & Colrain,	3,785 56	5 70
Springfield,	12,772 51	3 37
Taunton & Pawtucket (receiver),	2,644 82	6 57
Union,	16,925 62	2 85
Ware & Brookfield,	2,741 85	5 91
Worcester Consolidated,	10,555 38	4 36
Worcester & Warren,	2,265 17	3 89
Average,	\$13,579 24	\$4 79

The following table gives the average fare per revenue passenger, the operating revenue and operating expenses per car mile and per car hour, and the net operating revenue per car mile and per car hour: —

RAILWAY COMPANIES.	Average Fare per Revenue Passenger (Cents).	Operating Revenue per Car Mile (Cents).	Operating Expenses per Car Mile (Cents).	Net Operating Revenue per Car Mile (Cents).	Operating Revenue per Car Hour (Dollars).	Operating Expenses per Car Hour (Dollars).	Net Operating Revenue per Car Hour (Dollars).
Bay State,	4.88	31.39	24.30	7.09	2.59	2.00	.59
Berkshire,	4.91	27.50	20.92	6.58	3.16	2.40	.76
Blue Hill,	5.06	25.98	19.91	6.07	2.73	2.09	.64
Boston Elevated,	4.99	32.60	21.39	11.21	3.50	2.30	1.20
Boston & Worcester,	5.50	36.52	24.74	11.78	5.19	3.52	1.67
Bristol & Norfolk,	5.54	19.17	20.60	1.43*	2.32	2.49	.17*
Brockton & Plymouth,	5.80	25.91	21.83	4.08	2.53	2.13	.40
Concord, Maynard & Hudson,	5.58	30.08	20.90	9.18	3.47	2.41	1.06
Connecticut Valley,	5.38	28.61	20.97	7.64	3.10	2.27	.83
Conway Electric,	5.00	26.10	21.31	4.79	2.34	1.91	.43
East Taunton,	4.68	29.75	21.06	8.69	3.03	2.15	.88
Fitchburg & Leominster,	4.89	31.07	20.87	10.20	2.86	1.92	.94
Holyoke,	5.07	30.77	21.81	8.96	2.99	2.12	.87
Interstate Consolidated,	4.31	26.02	22.55	3.47	2.74	2.37	.37
Linwood,	3.39	34.00	26.08	7.92	2.14	1.64	.50
Lowell & Fitchburg,	5.27	26.23	16.44	9.79	3.43	2.15	1.28
Massachusetts Northeastern,	4.92	28.70	22.59	6.11	3.33	2.62	.71
Middlesex & Boston,	5.80	27.27	20.90	6.37	2.67	2.05	.62
Milford, Attleborough & Woonsocket,	4.91	24.82	21.07	3.75	2.90	2.46	.44
Milford & Uxbridge,	4.77	27.54	20.37	7.17	2.96	2.19	.77
Nahant & Lynn,	6.75	36.83	27.36	9.47	3.05	2.27	.78
New Bedford & Onset,	5.39	34.40	28.68	5.72	4.04	3.37	.67
Norfolk & Bristol,	5.58	21.62	15.82	5.80	2.20	1.61	.59
Northampton,	4.56	29.38	19.05	10.33	3.20	2.08	1.12
Northern Massachusetts,	4.76	27.80	24.65	3.15	2.60	2.31	.29
Norton & Taunton (receiver),	5.00	19.88	19.87	.01	2.13	2.13	—
Norwood, Canton & Sharon,	4.88	16.77	23.96	7.19*	1.23	1.76	.53*
Oak Bluffs,	5.00	58.22	69.54	11.32*	2.11	2.52	.41*
Plymouth & Sandwich,	8.63	21.72	20.89	.83	2.58	2.48	.10

* Loss.

RAILWAY COMPANIES.	Average Fare per Revenue Passenger (Cents).	Operating Revenue per Car Mile (Cents).	Operating Expenses per Car Mile (Cents).	Net Operating Revenue per Car Mile (Cents).	Operating Revenue per Car Hour (Dollars).	Operating Expenses per Car Hour (Dollars).	Net Operating Revenue per Car Hour (Dollars).
Point Shirley,	4.67	28.78	36.71	7.93*	1.35	1.72	.37*
Providence & Fall River,	4.65	30.56	24.72	5.84	4.51	3.65	.86
Shelburne Falls & Colrain,	5.00	42.82	26.18	16.64	4.03	2.46	1.57
Springfield,	4.95	27.22	21.95	5.27	2.51	2.02	.49
Bristol County property (receiver),	4.51	20.99	21.25	.26*	2.56	2.59	.03*
Union,	4.81	37.27	25.77	11.50	3.10	2.14	.96
Ware & Brookfield,	5.28	20.93	29.06	8.13*	2.21	3.07	.86*
Worcester Consolidated,	4.93	33.63	23.29	10.34	3.09	2.14	.95
Worcester & Warren,	5.77	17.27	16.49	.78	1.65	1.53	.07
Average,	4.97	31.94	22.76	9.18	3.14	2.24	.90

* Loss.

Gross and Net Earnings from Operation per Car Mile Run and per Passenger Carried, 1908-1916.

YEARS.	AVERAGE PER CAR MILE.			AVERAGE PER PASSENGER.		
	Gross Earnings (Cents).	Expenses of Operation (Cents).	Net Earnings (Cents).	Gross Earnings (Cents).	Expenses of Operation (Cents).	Net Earnings (Cents).
1908,	26.31	17.56	8.75	5.11	3.41	1.70
1909,	27.19	17.80	9.39	5.12	3.35	1.77
1910, ¹	27.39	18.45	8.94	5.12	3.45	1.67
1911,	28.33	18.51	9.82	5.13	3.35	1.78
1912,	28.85	19.48	9.37	5.14	3.47	1.67
1913,	29.19	19.70	9.49	5.16	3.48	1.68
1914,	29.99	20.14	9.85	5.18	3.48	1.70
1915,	29.91	20.57	9.34	5.20	3.58	1.62
1916,	30.75	21.76	8.99	5.21	3.69	1.52
1916, ²	31.44	22.41	9.03	5.25	3.74	1.51

¹ For nine months ending June 30, 1910.² Year ending December 31, 1916.

The following table gives the number of passengers carried per passenger car mile and per passenger car hour, and the car miles operated per car hour:—

RAILWAY COMPANIES.	Number of Passengers per Passenger Car Mile.	Number of Passengers per Passenger Car Hour.	Number of Car Miles per Car Hour.
Bay State,	6.1	51.5	8.4
Berkshire,	5.3	61.4	11.6
Blue Hill,	4.9	51.4	10.5
Boston Elevated,	6.3	68.1	10.7
Boston & Worcester,	6.3	104.5	16.6
Bristol & Norfolk,	3.3	40.6	12.1
Brockton & Plymouth,	4.3	44.5	10.3
Concord, Maynard & Hudson,	5.3	61.2	11.5
Connecticut Valley,	5.2	57.4	11.0
Conway Electric,	2.5	23.3	9.0
East Taunton,	6.3	64.5	10.1
Fitchburg & Leominster,	6.1	57.7	9.3
Holyoke,	5.9	58.3	9.8
Interstate Consolidated,	5.6	60.9	10.9
Linwood,	9.6	61.0	6.3
Lowell & Fitchburg,	4.9	64.5	13.1
Massachusetts Northeastern,	5.7	65.9	11.6
Middlesex & Boston,	4.5	44.8	9.8
Milford, Attleborough & Woonsocket,	4.8	58.5	12.1
Milford & Uxbridge,	5.2	56.4	10.7
Nahant & Lynn,	5.4	45.0	8.3
New Bedford & Onset,	4.7	61.4	13.1
Norfolk & Bristol,	3.8	38.7	10.1
Northampton,	6.6	71.8	10.9
Northern Massachusetts,	5.6	53.0	9.4
Norton & Taunton (receiver),	3.8	41.3	10.7
Norwood, Canton & Sharon,	3.2	23.5	7.3
Oak Bluffs,	11.4	41.3	3.6
Plymouth & Sandwich,	2.3	27.9	11.9
Point Shirley,	6.1	28.9	4.7
Providence & Fall River,	4.3	73.3	17.0
Shelburne Falls & Colrain,	3.3	31.1	9.4
Springfield,	5.3	49.4	9.3
Bristol County property (receiver),	4.6	56.4	12.2
Union,	7.2	60.5	8.4
Ware & Brookfield,	3.6	38.8	10.5
Worcester Consolidated,	6.6	61.4	9.3
Worcester & Warren,	3.0	28.3	9.6
Average,	6.1	59.9	9.8

VOLUME OF TRAFFIC.

The total number of passengers carried during the last year as reported by the thirty-eight operating railway companies making returns to this Commission was 822,372,041, — an increase of 26,745,584 passengers over the previous June 30.

The total number of miles run by street cars during the year was 137,239,692, — an increase of 2,350,632 miles over the previous June 30.

The following table gives the total volume of traffic, itemized as above, for each of the last nine years and for the nine months ending June 30, 1910: —

Volume of Traffic, 1908-1916.

YEARS.	Total Passengers Carried.	Average Number per Mile of Main Track Operated.	Total Car Miles Run.
1908,	602,400,874	219,774	116,982,089
1909,	624,532,753	225,887	117,493,499
1910, ¹	469,330,784	169,921	87,712,572
1911,	683,362,717	246,021	123,659,082
1912,	701,798,274	248,698	125,078,724
1913,	738,522,280	253,044	130,588,851
1914,	766,628,535	261,853	132,355,825
1915,	760,464,372	257,558	132,187,596
1916,	795,626,457	267,191	134,889,060
1916, ²	822,372,041	275,779	137,239,692

¹ For nine months ending June 30, 1910.² Year ending December 31, 1916.

EMPLOYEES AND EQUIPMENT.

The number of persons employed by the street railway companies, and also the number of passenger cars, other cars and plows and electric motors owned, are given in the following table for each of the last nine years and for the nine months ending June 30, 1910:—

Employees and Equipment, 1908-1916.

YEARS.	Employees.	Passenger Cars.	Other Cars and Plows.	Electric Motors.
1908,	17,267	7,618	2,890	16,649
1909,	17,575	7,546	2,834	16,526
1910, ¹	18,839	7,669	2,869	17,586
1911,	21,972	7,821	2,907	17,921
1912,	23,290	8,004	2,929	18,267
1913,	24,136	8,154	2,897	19,623
1914,	23,412	8,364	2,927	20,636
1915,	23,842	8,296	1,399	20,688
1916,	24,203	8,160	1,374	20,293
1916, ²	22,201	8,203	1,393	20,299

¹ For nine months ending June 30, 1910.

² Year ending December 31, 1916.

STREET RAILWAY ACCIDENTS.

The total number of persons injured, in connection with street railway operation, as returned by the companies for the year ending December 31, 1916, was 14,310, of whom 147 received fatal injuries and 14,163 injuries not fatal.

The number of passengers injured was 10,455, of whom 64 were injured fatally.

The injuries to employees were 1,931 in all, 26 of which were fatal.

The number of injuries to travellers and others on the street was 1,924, of which 57 were fatal.

These figures include a very large number of injuries of a trivial character that have been returned by the companies.

In the following table the accidents of the last year as returned are classified as above, and are compared with those of the previous June 30: —

Summary of Accidents Reported.

KILLED AND INJURED.	KILLED.		INJURED.		TOTALS.	
	June 30, 1916.	Decem- ber 31, 1916.	June 30, 1916.	Decem- ber 31, 1916.	June 30, 1916.	Decem- ber 31, 1916.
Passengers,	18	64	7,663	10,391	7,681	10,455
Employees,	16	26	1,880	1,905	1,896	1,931
Other persons,	61	57	1,482	1,867	1,543	1,924
Totals,	95	147	11,025	14,163	11,120	14,310

The following is a summary of all accidents reported by the street railway companies for the year ending December 31, 1916, whether personal injury or property damage resulted or not, showing the manner in which said accidents occurred: —

Classification of Accidents.

1. Collision with vehicles,	9,063
2. Collision with persons,	1,149
3. Collision with cars,	996
4. Derailment of cars,	2,866
5. Split switch, no derailment,	757
6. Boarding cars:	
(a) Open cars,	1,063
(b) Box cars,	2,539
(c) Semi cars,	351
7. Alighting from cars:	
(a) Open cars,	3,216
(b) Box cars,	3,275
(c) Semi cars,	729
8. Fell in or on car,	1,695
9. Injured on running board of open car,	259
10. Electrical troubles (controller or fuse blowout, etc.),	1,899
11. Injured on account of condition of highway (track construction or repairs),	144
12. Injured by falling trolley or span wire,	168
13. Injured by falling side bar,	102
14. Injured by falling window, register light bulbs, etc.,	1,329

TABULATED STATEMENT OF INCOME ACCOUNTS FROM THE REPORTS OF STREET RAILWAY COMPANIES,
YEAR ENDING DECEMBER 31, 1916.

	RAILWAY COMPANIES.		Railway Operating Revenues.	Railway Operating Expenses.	Net Revenue Railway Operations.	Net Revenue Auxiliary Operations.	Net Operating Revenues.	Taxes assignable to Railway Operations.	Operating Income.
1	Bay State,	.	\$10,182,550 32	\$7,882,424 40	\$2,300,125 92	\$140,691 31	\$2,440,817 23	\$626,250 04	\$1,814,567 19
2	Berkshire,	.	999,886 30	760,595 41	239,290 89	-	239,290 89	54,373 03	184,917 86
3	Blue Hill,	.	92,958 80	71,241 63	21,717 17	-	21,717 17	3,153 25	18,563 92
4	Boston & Chelsea,	.	-	-	-	-	-	-	-
5	Boston Elevated,	.	19,286,975 27	12,654,122 32	6,632,852 95	-	6,632,852 95	1,034,981 94	5,597,871 01
6	Boston & Revere Electric,	.	-	-	-	-	-	-	-
7	Boston & Worcester,	.	822,360 78	557,024 14	265,336 64	-	265,336 64	51,202 08	214,134 56
8	Bristol & Norfolk,	.	15,537 86	16,693 90	1,156 04d	-	1,156 04d	123 17	1,279 21d
9	Brookton & Plymouth,	.	122,438 76	103,164 79	19,273 97	-	19,273 97	5,749 71	13,524 26
10	Concord, Maynard & Hudson,	.	81,304 78	56,499 33	24,805 45	-	24,805 45	2,748 34	22,057 11
11	Connecticut Valley,	.	240,320 28	176,148 73	64,171 55	-	64,171 55	10,011 54	54,160 01
12	Conway Electric,	.	10,882 27	8,886 92	1,995 35	-	1,995 35	457 06	1,538 29
13	East Middlesex,	.	-	-	-	-	-	-	-
14	East Taunton,	.	49,777 07	35,239 99	14,537 08	-	14,537 08	3,426 35	11,110 73
15	Fitchburg & Leominster,	.	346,572 99	232,741 35	113,831 64	-	113,831 64	18,265 80	95,565 84
16	Holyoke,	.	695,108 22	492,745 79	202,362 43	-	202,362 43	43,480 43	158,882 00
17	Interstate Consolidated,	.	187,332 05	162,382 16	24,949 89	-	24,949 89	4,743 64	20,206 25
18	Linwood,	.	21,439 19	16,446 19	4,993 00	-	4,993 00	753 57	4,239 43
19	Lowell & Fitchburg,	.	58,278 58	36,531 41	21,747 17	-	21,747 17	1,275 02	20,472 15
20	Martha's Vineyard,	.	-	-	-	-	-	-	-
21	Massachusetts Northeastern,	.	758,101 81	596,843 59	161,258 22	-	161,258 22	28,102 33	133,155 89
22	Medway & Dedham,	.	-	-	-	-	-	-	-
23	Middlesex & Boston,	.	1,051,369 21	805,622 77	245,746 44	-	245,746 44	36,923 52	208,822 92
24	Milford, Attleborough & Woonsocket,	.	106,928 95	90,781 25	16,147 70	-	16,147 70	3,345 04	12,802 66
25	Milford & Uxbridge,	.	278,827 63	206,236 05	72,591 58	-	72,591 58	14,058 76	58,532 82
26	Mount Tom,	.	-	-	-	-	-	-	-

27	Nahant & Lynn,	52,873 98	39,277 54	13,596 44	-	13,596 44	2,508 22	11,088 22
28	New Bedford & Onset,	176,498 36	147,165 17	29,333 19	-	29,333 19	8,690 49	20,642 70
29	Newtonville & Watertown,	-	-	-	-	-	-	-
30	Norfolk & Bristol,	97,760 12	71,540 06	26,220 06	-	26,220 06	3,149 87	23,070 19
31	Northampton,	228,052 01	147,872 40	80,179 61	-	80,179 61	22,350 72	57,828 89
32	North End,	-	-	-	-	-	-	-
33	Northern Massachusetts,	226,256 70	200,647 07	25,609 63	-	25,609 63	12,886 06	12,723 57
34	{ Norton & Taunton,	-	-	-	-	-	-	-
34	{ Norton & Taunton (receiver),	64,927 08	64,900 30	26 78	-	26 78	1,732 20	1,705 42 <i>d</i>
35	Norwood, Canton & Sharon,	11,272 41	16,106 80	4,834 39 <i>d</i>	-	4,834 39 <i>d</i>	204 11	5,038 50 <i>d</i>
36	Oak Bluffs,	4,791 99	5,723 95	931 96 <i>d</i>	-	931 96 <i>d</i>	132 65	1,064 61 <i>d</i>
37	Plymouth & Sandwich,	7,749 11	7,454 26	294 85	-	294 85	203 11	91 74
38	Point Shirley,	8,813 65	11,241 29	2,427 64 <i>d</i>	-	2,427 64 <i>d</i>	126 11	2,553 75 <i>d</i>
39	Providence & Fall River,	53,311 63	43,126 89	10,184 74	-	10,184 74	1,780 89	8,403 85
40	Shelburne Falls & Colrain,	28,126 69	17,196 28	10,930 41	-	10,930 41	1,307 94	9,622 47
41	Somerville,	-	-	-	-	-	-	-
42	Springfield,	2,399,698 61	1,934,881 09	464,817 52	-	464,817 52	139,735 70	325,081 82
43	{ Taunton & Pawtucket,	-	-	-	-	-	-	-
43	{ Bristol County property (receiver),	51,574 02	52,202 31	628 29 <i>d</i>	-	628 29 <i>d</i>	1,758 24	2,386 53 <i>d</i>
44	Union,	1,084,255 74	749,618 13	334,637 61	-	334,637 61	78,106 26	256,531 35
45	Ware & Brookfield,	32,299 03	44,847 12	12,548 09 <i>d</i>	-	12,548 09 <i>d</i>	440 98	12,989 07 <i>d</i>
46	Webster & Dudley,	-	-	-	-	-	-	-
47	West End,	-	-	-	-	-	-	-
48	Winnisimmet,	-	-	-	-	-	-	-
49	Worcester Consolidated,	3,167,458 44	2,193,685 29	973,773 15	-	973,773 15	186,178 46	787,594 69
50	Worcester & Shrewsbury Railroad,	-	-	-	-	-	-	-
51	Worcester & Shrewsbury Street Railway,	-	-	-	-	-	-	-
52	Worcester & Warren,	45,529 95	43,474 75	2,055 20	-	2,055 20	1,287 50	767 70
53	Worcester & Webster,	-	-	-	-	-	-	-
Totals		\$43,150,200 64	\$30,753,332 82	\$12,396,867 82	\$140,691 31	\$12,537,559 13	\$2,406,004 13	\$10,131,555 00

d Deficit.

Income Statement for the Year ending December 31, 1916 — Continued.

RAILWAY COMPANIES.		Income from Lease of Road.	Miscellaneous Nonoperating Income.	Gross Income.	Rent for Leased Roads.	Interest on Funded Debt.	Interest on Unfunded Debt.	Amortiza- tion of Discount on Funded Debt.
1	Bay State,	\$52,230 59	\$10,669 08	\$1,877,466 86	\$192,667 85	\$1,050,774 03	\$68,775 28	\$26,219 00
2	Berkshire,	—	2,269 05	187,186 91	42,300 00	79,000 00	183,045 47	30 00†
3	Blue Hill,	—	3 28	18,567 20	—	12,500 00	7,389 83	—
4	Boston & Chelsea,	7,560 00	2 00	7,562 00	—	—	—	—
5	Boston Elevated,	1,029 30	87,255 36	5,686,155 87	2,590,072 46	1,066,183 25	71,450 48	4,437 09
6	Boston & Revere Electric,	5,000 00	53 84	5,053 84	—	2,500 00	—	—
7	Boston & Worcester,	—	775 25	214,909 81	—	111,270 00	—	—
8	Bristol & Norfolk,	—	—	1,279 21d	—	3,500 00	7,961 45	—
9	Brockton & Plymouth,	—	175 64	13,699 90	—	11,700 00	92 10	—
10	Concord, Maynard & Hudson,	378 24	1,347 57	23,782 92	750 00	11,500 00	1,585 53	—
11	Connecticut Valley,	—	8,857 29	63,017 30	—	29,000 00	2,660 90	—
12	Conway Electric,	—	—	1,538 29	—	4,650 00	16,079 10	—
13	East Middlesex,	40,726 36	146 08	40,872 44	—	10,000 00	2,075 11	—
14	East Taunton,	—	556 24	11,666 97	—	2,250 00	—	—
15	Fitchburg & Leominster,	—	1,805 26	97,371 10	—	19,250 00	38,517 17	—
16	Holyoke,	—	4,256 91	163,138 91	—	60,000 00	3,294 27	—
17	Interstate Consolidated,	—	817 77	21,024 02	6,000 00	—	14,300 00	—
18	Linwood,	—	—	4,239 43	—	—	10 00	—
19	Lowell & Fitchburg,	—	1,763 93	22,236 08	—	13,750 00	—	—
20	Martha's Vineyard,	2,048 09	—	2,048 09	—	—	—	—
21	Massachusetts Northeastern,	—	20,923 64	154,079 53	—	50,000 00	21,321 19	—
22	Medway & Dedham,	3,000 00	—	3,000 00	—	—	—	—
23	Middlesex & Boston,	—	856 45	209,679 37	—	89,266 25	63,811 21	2,703 55
24	Milford, Attleborough & Woonsocket,	—	975 95	13,778 61	—	15,000 00	275 00	—
25	Milford & Uxbridge,	—	—	58,532 82	3,000 00	25,000 00	1,721 52	—
26	Mount Tom,	6,000 00	136 06	6,136 06	—	—	—	—

27	Nahant & Lynn,	-	66	11,088 88	-	5,000 00	1,163 54
28	New Bedford & Onset,	-	-	20,642 70	-	14,000 00	1,018 86
29	Newtonville & Watertown,	8,443 28	70 25	8,513 53	-	-	2,684 25
30	Norfolk & Bristol,	-	292 02	23,362 21	-	10,000 00	-
31	Northampton,	-	1,428 87	59,257 76	-	-	2,077 78
32	North End,	8,000 00	19 01	8,019 01	-	3,750 00	-
33	Northern Massachusetts,	-	54,448 54	67,172 11	-	25,000 00	16,695 76
34	{ Norton & Taunton,	-	-	-	-	-	-
35	{ Norton & Taunton (receiver),	-	510 73	1,194 69d	-	-	-
36	{ Norwood, Canton & Sharon,	-	-	5,038 50d	-	1,500 00	-
37	{ Oak Bluffs,	-	273 25	791 36d	480 00	-	-
38	{ Plymouth & Sandwich,	-	11 00	102 74	-	-	909 47
39	{ Point Shirley,	-	36 86	2,516 89d	-	-	136 00
40	{ Providence & Fall River,	-	-	8,403 85	-	8,250 00	5,667 03
41	{ Shelburne Falls & Colrain,	-	-	9,622 47	-	4,785 00	-
42	{ Somerville,	9,180 00	-	9,180 00	-	-	-
43	{ Springfield,	-	2,255 16	327,336 98	-	98,250 00	49,307 15
44	{ Taunton & Pawtucket,	-	-	-	-	-	-
45	{ Bristol County property (receiver),	-	-	2,386 53d	-	-	-
46	{ Union,	-	940 79	257,472 14	-	11,250 00	7,531 25
47	{ Ware & Brookfield,	-	-	12,989 07d	-	6,750 00	-
48	{ Webster & Dudley,	14,500 00	-	14,500 00	10,560 00	1,500 00	-
49	{ West End,	2,335,525 50	171 80	2,335,697 30	-	873,865 00	-
50	{ Winnisimmet,	3,000 00	-	3,000 00	-	-	-
51	{ Worcester Consolidated,	-	11,035 52	798,630 21	27,250 00	233,140 00	54,511 23
52	{ Worcester & Shrewsbury Railroad,	3,750 00	-	3,750 00	-	1,100 00	-
53	{ Worcester & Shrewsbury Street Railway,	1,000 00	-	1,000 00	-	-	-
54	{ Worcester & Warren,	-	-	767 70	-	866 67	2,001 68
55	{ Worcester & Webster,	10,500 00	1,415 51	11,915 51	-	7,500 00	-
Totals,		\$2,511,871 36	\$216,556 82	\$12,859,983 18	\$2,873,020 31	\$3,973,600 20	\$648,069 61
							\$33,329 64

d Deficit.

† Credit.

Income Statement for the Year ending December 31, 1916 — Concluded.

RAILWAY COMPANIES.				Maintenance of Organization.	Miscellaneous Debits.	Total Deductions.	Net Income.	Dividends Declared.	Percentage of Dividends Declared.	Surplus for Year.
1	Bay State,	.	.	.	.	.	\$534,153 22	\$227,244 50	$\frac{1}{4}$ and 6	\$306,908 72
2	Berkshire,	.	.	.	.	.	129,480 76d	—	—	129,480 76d
3	Blue Hill,	.	.	.	.	.	1,538 69d	—	—	1,538 69d
4	Boston & Chelsea,	.	.	.	.	300 00	7,262 00	7,260 00	6	2 00
5	Boston Elevated,	.	.	.	.	4,520,813 35	1,105,342 52	1,193,970 00	5	28,027 48d
6	Boston & Revere Electric,	.	.	.	.	2,500 00	2,553 84	2,500 00	5	53 84
7	Boston & Worcester,	.	.	.	.	119,231 45	95,678 36	100,369 50	$3\frac{3}{4}$ and 6	4,091 14d
8	Bristol & Norfolk,	.	.	.	.	3,592 10	4,871 31d	—	—	4,871 31d
9	Brookton & Plymouth,	.	.	.	.	13,484 20	215 70	3,300 00	3	3,084 30d
10	Concord, Maynard & Hudson,	.	.	.	.	14,910 90	8,872 02	9,400 00	4	527 98d
11	Connecticut Valley,	.	.	.	.	45,079 10	17,938 20	12,196 00	1 and 6	5,742 20
12	Conway Electric,	.	.	.	.	6,725 11	5,186 82d	—	—	5,186 82d
13	East Middlesex,	.	.	.	.	10,699 56	30,172 88	29,770 00	10	402 88
14	East Taunton,	.	.	.	.	2,250 00	9,416 97	4,890 00	5	4,526 97
15	Fitchburg & Leominster,	.	.	.	.	57,767 17	39,603 93	27,000 00	6	12,603 93
16	Holyoke,	.	.	.	.	69,294 27	93,844 64	80,520 00	6	13,324 64
17	Interstate Consolidated,	.	.	.	.	14,306 81	6,717 21	—	—	6,717 21
18	Linwood,	.	.	.	.	10 00	4,229 43	720 00	6	3,509 43
19	Lowell & Fitchburg,	.	.	.	.	13,750 00	8,486 08	5,500 00	2	2,986 08
20	Martha's Vineyard,	.	.	.	.	—	2,048 09	—	—	2,048 09
21	Massachusetts Northeastern,	.	.	.	.	71,321 19	82,758 34	29,925 00	$4\frac{1}{2}$	52,833 34
22	Medway & Dedham,	.	.	.	.	96 25	2,903 75	2,925 00	$4\frac{1}{2}$	21 25d
23	Middlesex & Boston,	.	.	.	.	156,525 45	53,153 92	52,158 75	$4\frac{1}{4}$	995 17
24	Milford, Attleborough & Woonsocket,	.	.	.	.	15,923 75	2,145 14d	—	—	2,145 14d
25	Milford & Uxbridge,	.	.	.	.	29,721 52	28,811 30	28,000 00	5 and 6	811 30
26	Mount Tom,	.	.	.	.	—	6,136 06	6,000 00	6	136 06

27	Nahant & Lynn,	-	6,163 54	4,925 34	5,000 00	5	74 66d
28	New Bedford & Onset,	6,000 00	21,018 86	376 16d	-	-	376 16d
29	Newtonville & Watertown,	1,236 57	4,374 82	4,138 71	3,600 00	7.2	538 71
30	Norfolk & Bristol,	-	10,000 00	13,362 21	-	-	13,362 21
31	.Northampton,	-	2,077 78	57,179 98	42,500 00	5	14,679 98
32	North End,	60 25	3,810 25	4,208 76	4,125 00	3¾	83 76
33	Northern Massachusetts,	-	41,695 76	25,476 35	9,000 00	6	16,476 35
34	{ Norton & Taunton,	-	-	-	-	-	-
35	{ Norton & Taunton (receiver),	-	-	1,194 69d	-	-	1,194 69d
36	Norwood, Canton & Sharon,	-	1,500 00	6,538 50d	-	-	6,538 50d
37	Oak Bluffs,	60 19	540 19	1,331 55d	-	-	1,331 55d
38	Plymouth & Sandwich,	-	909 47	806 73d	-	-	806 73d
39	Point Shirley,	-	136 00	2,652 89d	-	-	2,652 89d
40	Providence & Fall River,	-	13,917 03	5,513 18d	-	-	5,513 18d
41	Shelburne Falls & Colrain,	-	4,785 00	4,837 47	2,500 00	5	2,337 47
42	Somerville,	-	-	9,180 00	9,180 00	6	-
43	{ Springfield,	717 48	148,274 63	179,062 35	244,371 75	5¼	65,309 40d
44	{ Taunton & Pawtucket,	-	-	-	-	-	-
45	Union,	-	18,781 25	2,386 53d	-	-	2,386 53d
46	Ware & Brookfield,	-	6,750 00	238,690 89	130,000 00	8	108,690 89
47	Webster & Dudley,	-	12,000 00	19,739 07d	-	-	19,739 07d
48	West End,	7,778 00	881,643 00	2,500 00	2,500 00	5	-
49	Winnimmet,	-	-	1,454,054 30	1,453,160 50	7 and 8	893 80
50	Worcester Consolidated,	2,166 09	317,067 32	3,000 00	3,000 00	6	-
51	Worcester & Shrewsbury Railroad,	-	1,100 00	481,562 89	346,300 00	5	135,262 89
52	Worcester & Shrewsbury Street Railway,	-	-	2,650 00	2,649 74	7.22	26
53	Worcester & Warren,	-	2,868 35	1,000 00	1,000 00	5	-
54	Worcester & Webster,	-	7,500 00	2,100 65d	-	-	2,100 65d
Totals,		\$9,388 06	\$817,894 81	\$4,504,680 55	\$4,082,535 74	-	\$422,144 81

d Deficit.

TABULATED STATEMENT OF INCOME ACCOUNTS FROM REPORTS OF TELEPHONE COMPANIES, YEAR
ENDING DECEMBER 31, 1916.

TELEPHONE COMPANIES.		Operating Revenue.	Operating Expenses.	Net Operating Revenue.	Non- operating Income.	Gross Income.	Deductions from Income.
American Telephone and Telegraph, Automatic, New Bedford,	.	\$28,041,578 52	\$12,690,652 29	\$15,350,926 23	\$32,199,025 00	\$47,549,951 23	\$9,536,673 64
Beechmont Independent,	.	61,140 13	32,490 91	28,649 22	-	28,649 22	11,961 11
Blandford & Chester,	.	84 00	60 00	24 00	-	24 00	-
Columbia & Rensselaer,	.	19,493 97	16,422 26	3,071 71	-	3,071 71	45 00
Crescent,	.	1,106 50	690 00	486 50	-	486 50	-
Fall River Automatic,	.	146 44	8,887 35	8,740 91 <i>d</i>	1 99	8,738 92 <i>d</i>	4,636 68
Granby,	.	2,437 12	2,270 51	166 61	-	166 61	-
Heath,	.	41,572 50	30,881 50	10,691 00	-	10,691 00	482 20
Heath Local,	.	799 00	814 77	15 77 <i>d</i>	-	15 77 <i>d</i>	-
Highland,	.	1,969 12	856 88	1,102 24	-	1,102 24	39 25
Littleton,	.	368 60	116 00	252 60	-	252 60	-
Massachusetts,	.	250 00	771 12	521 12 <i>d</i>	-	521 12 <i>d</i>	-
Millers Falls,	.	1,947 39	1,632 19	315 20	-	315 20	90 00
Mixer Brothers,	.	4,726 41	4,482 47	243 94	-	243 94	2,360,761 63
New England Telephone and Telegraph, New England Telephone and Telegraph of Massachusetts,	.	20,971,273 67	14,945,729 15	6,025,544 52	495,847 78	6,521,392 30	-
Northfield Farms,	.	639 57	318 39	321 18	-	321 18	-
North Orange,	.	86 79	64 82	21 97	-	21 97	-
Oakham & Coldbrook Springs,	.	1,810 58	1,667 75	142 83	-	142 83	-
Providence,	.	90,927 06	70,508 34	20,418 72	132 89	20,551 61	7,557 47
Richmond,	.	2,038 74	1,950 80	87 94	-	87 94	-
Southern Massachusetts,	.	-	-	-	-	-	-
State Line,	.	13 00	38 40	25 40 <i>d</i>	-	25 40 <i>d</i>	-
Taghonic,	.	270 00	155 14	114 86	-	114 86	-
West Stockbridge Mutual,	.	135 00	136 00	5 00	-	5 00	-
Totals,	.	\$49,244,804 11	\$27,811,521 04	\$21,433,283 07	\$32,095,007 66	\$54,128,290 73	\$11,831,246 98

d Deficit.

Tabulated Statement of Income Accounts from Reports of Telephone Companies, Year ending December 31, 1916 — Concluded.

TELEPHONE COMPANIES.		Net Income.	Appropriations of Income.	Dividend Appropriations.	Total Appropriations of Income.	Surplus for the Year.
American Telephone and Telegraph, Automatic, New Bedford, . . . . .	.	\$38,013,277 59	\$2,500,000 00	\$31,122,187 46	\$33,622,187 46	\$4,331,090 13
Beechmont Independent, . . . . .	.	16,688 11	—	16,500 00	16,500 00	188 11
Blandford & Chester, . . . . .	.	24 00	—	—	—	24 00
Columbia & Rensselaer, . . . . .	.	3,026 71	—	2,100 00	2,100 00	926 71
Crescent, . . . . .	.	486 50	—	—	—	486 50
Fall River Automatic, . . . . .	.	13,375 60d	—	—	—	13,375 60d
Granby, . . . . .	.	166 61	—	96 00	96 00	70 61
Heath, . . . . .	.	10,208 81	—	6,428 01	6,428 01	3,780 79
Heath Local, . . . . .	.	15 77d	—	48 60	48 60	64 37d
Highland, . . . . .	.	1,062 99	—	—	—	1,062 99
Littleton, . . . . .	.	282 60	—	—	—	282 60
Massachusetts, . . . . .	.	521 12d	—	—	—	521 12d
Millers Falls, . . . . .	.	315 20	—	—	—	315 20
Mixer Brothers, . . . . .	.	153 94	—	—	—	153 94
New England Telephone and Telegraph, New England Telephone and Telegraph of Massachusetts, Northfield Farms, . . . . .	.	4,251,630 67	—	3,460,346 75	3,460,346 75	791,283 92
North Orange, . . . . .	.	321 18	—	—	—	321 18
Oakham & Coldbrook Springs, . . . . .	.	21 97	—	—	—	21 97
Providence, . . . . .	.	142 83	—	129 36	129 36	13 47
Richmond, . . . . .	.	12,994 14	—	6,400 00	6,400 00	6,594 14
Southern Massachusetts, . . . . .	.	87 94	—	128 80	128 80	40 86d
State Line, . . . . .	.	25 40d	—	—	—	25 40d
Taheconic, . . . . .	.	114 86	—	90 00	90 00	24 86
West Stockbridge Mutual, . . . . .	.	5 00	—	—	—	5 00
Totals, . . . . .	.	\$42,297,043 75	\$2,500,000 00	\$34,614,454 98	\$37,114,454 98	\$5,182,588 77

d Deficit.

TABULATED STATEMENT OF INCOME ACCOUNTS FROM REPORTS OF TELEGRAPH COMPANIES, YEAR
ENDING DECEMBER 31, 1916.

TELEGRAPH COMPANIES.				Operating Revenue.	Operating Expenses.	Net Operating Revenue.	Non- operating Income.	Gross Income.
Commercial Cable,	.	.	.	\$45,164 20	\$40,144 06	\$5,020 14	\$317 84	\$5,337 98
Martha's Vineyard Telegraph,	.	.	.	17,316 68	10,508 67	6,808 01	-	6,808 01
New England Telegraph,	.	.	.	13,860 91	15,066 91	1,206 00 <i>d</i>	-	1,206 00 <i>d</i>
Postal Telegraph Cable of Massachusetts,	.	.	.	405,212 83	402,362 85	2,349 98	22 91	2,372 89
United Telegram,	.	.	.	32,799 99	41,204 06	8,404 07 <i>d</i>	4,434 42	3,969 65 <i>d</i>
Western Union,	.	.	.	61,919,140 52	43,018,323 45	18,900,812 07	1,702,460 09	20,603,272 16
Totals,	.	.	.	\$62,433,495 13	\$43,528,115 00	\$18,905,380 13	\$1,707,235 26	\$20,612,615 39

d Deficit.

Tabulated Statement of Income Accounts from Reports of Telegraph Companies, Year ending December 31, 1916 — Concluded.

TELEGRAPH COMPANIES.				Deductions from Income.	Net Income.	Dividend Appropriations.	Total Appropriations.	Surplus for the Year.
Commercial Cable,	\$5,270 32	\$67 66	-	\$67 66
Martha's Vineyard Telegraph,	-	6,808 01	\$500 00	6,308 01
New England Telegraph,	495 70	1,701 70 ^d	-	1,701 70 ^d
Postal Telegraph Cable of Massachusetts,	3,514 84	1,141 95 ^d	-	1,141 95 ^d
United Telegram,	-	3,969 65 ^d	-	3,969 65 ^d
Western Union,	8,207,867 12	12,395,405 04	5,984,566 75	6,410,838 29
Totals,	\$8,217,147 98	\$12,395,467 41	\$5,985,066 75	\$6,410,400 66

^d Deficit.

Marshall & Moulton,	62,644 08	58,851 41	3,702 67	-	3,702 67	120 37	3,672 30	3,072 30
Marson's,	39,126 75	35,749 22	3,377 53	-	3,377 53	531 62	2,845 91	2,845 91
McIntosh,	6,084 00	5,315 00	769 00	-	769 00	-	769 00	769 00
McKees,	18,994 62	16,983 07	2,011 55	-	2,011 55	-	1,809 38	1,809 38
Munroe & Arnold-Merritts,	217,008 92	213,018 91	4,090 01	-	4,090 01	202 17	20 85d	20 85d
New York & Boston Despatch,	68,121 80	69,586 42	1,464 62d	-	1,464 62d	4,110 86	1,476 53d	1,476 53d
North Shore,	142,832 09	137,746 94	5,085 15	-	5,085 15	11 91	3,885 15	3,885 15
Parker's,	19,291 03	18,338 99	452 04	-	452 04	1,200 00	423 10	423 10
Penniman's,	5,503 20	5,436 48	66 72	7 00	73 72	28 94	31 28d	31 28d
Peoples,	36,134 64	31,918 31	4,216 33	-	4,216 33	105 00	4,127 67	4,127 67
Petingell & Dwelly,	24,721 84	20,710 74	4,011 10	-	4,011 10	88 66	1,011 10	1,011 10
Presson,	9,600 00	9,600 00	-	-	-	-	3,000 00	3,000 00
Richmond,	5,904 40	5,672 16	232 24	-	232 24	39 00	39 00d	39 00d
Sherborne-Coughlin,	26,704 14	23,125 75	3,578 39	-	3,578 39	17 30	214 94	214 94
Smith's,	24,134 57	23,423 79	710 78	-	710 78	57 72	3,520 67	3,520 67
Smith & Co.,	38,201 76	37,321 60	880 16	-	880 16	133 98	576 80	576 80
Tenney's,	7,704 60	7,311 07	393 53	-	393 53	-	880 16	880 16
Thompson's,	58,174 86	58,174 86	-	-	-	7 00	386 53	386 53
Vance's,	6,353 94	5,510 74	843 20	-	843 20	-	843 20	843 20
Wheeler,	33,553 85	32,961 10	592 75	-	592 75	61 43	531 32	531 32
Wright's,	13,426 76	11,417 61	2,008 15	-	2,008 15	255 86	1,753 29	1,753 29
Totals,	\$115,400,874 09	\$111,332,282 66	\$4,068,591 43	\$2,814,334 10	\$6,882,925 53	\$2,059,412 41	\$4,323,513 12	\$2,787,343 12

d Deficit.

TABULATED STATEMENT OF INCOME ACCOUNTS FROM REPORTS OF VOLUNTARY ASSOCIATIONS, YEAR
ENDING DECEMBER 31, 1916.

VOLUNTARY ASSOCIATIONS.	Gross Income.	Deduct- tions from Income.	Net Income.	Interest Charges.	Net Divisible Income.	Dividends Paid.	Surplus for the Year.
Boston Suburban Electric Companies,	\$168,152 54	\$4,503 08	\$163,649 46	\$46,976 51	\$116,672 95	\$93,609 00	\$23,063 95
Boston & Worcester Electric Companies,	91,078 54	1,708 46	89,370 08	-	89,370 08	84,840 00	4,530 08
Massachusetts Consolidated Railways,	20,438 60	3,619 39	16,819 21	10,343 37	6,475 84	38,753 00	32,277 16d
Massachusetts Electric Companies,	153,481 22	13,914 11	139,567 11	150,000 00	10,432 89d	-	10,432 89d
New England Investment and Security Company,	506,147 29	15,909 05	490,238 24	411,270 00	78,968 24	160,000 00	81,031 76d
New Hampshire Electric Railways,	141,690 77	1,334 67	140,356 10	10,084 35	130,271 75	67,990 00	62,281 75
Southeastern Electric Companies,	46 70	1,400 00	1,353 30d	-	1,353 30d	-	1,353 30d
Springfield Railway Companies,	244,146 34	2,592 28	241,554 06	-	241,554 06	228,676 00	12,878 06
Worcester Railway and Investment Company,	357,226 95	4,461 96	352,764 99	-	352,764 99	304,053 00	48,711 99
Totals,	\$1,682,408 95	\$49,443 00	\$1,632,965 95	\$628,674 23	\$1,004,291 72	\$977,921 00	\$26,370 72

d Deficit.

STATEMENT OF INCOME ACCOUNTS FROM REPORT OF SLEEPING CAR COMPANY, YEAR ENDING
DECEMBER 31, 1916.

	Gross Income.	Deductions from Income.	Net Income.	Interest Charges.	Net Divisible Income.	Dividends Paid.	Surplus for the Year.
Pullman Company,	\$44,816,881 40	\$33,096,602 51	\$11,720,278 89	\$17,699 49	\$11,705,579 40	\$9,529,034 66	\$2,173,544 74

TABULATED STATEMENT OF INCOME ACCOUNTS FROM REPORTS OF STEAMBOAT COMPANIES, YEAR
ENDING DECEMBER 31, 1916.

STEAMBOAT COMPANIES.	Operating Revenues.	Operating Expenses.	Net Operating Revenue.	Miscellaneous Income.	Gross Income.	Deductions from Income.	Net Divisible Income.	Dividend Appropriations.	Surplus for the Year.
Boston and Gloucester,	\$135,094 67	\$131,036 08	\$4,058 59	\$102 00	\$4,160 59	\$3,554 08	\$606 51	-	\$806 51
Boston, Nahant and Pines,	53,113 78	65,158 03	12,044 25 ^d	37 74	12,006 51 ^d	4,799 71	16,806 22 ^d	-	16,806 22 ^d
Cape Cod,	77,945 79	68,377 95	9,567 84	323 51	9,893 35	458 76	9,434 59	\$6,800 00	2,634 59
Nantasket Beach,	424,547 51	338,735 12	85,812 39	12,931 22	98,743 61	21,860 12	76,883 49	80,000 00	3,116 51 ^d
New Bedford, Martha's Vineyard and Nantucket,	264,747 81	220,551 42	44,196 39	6,133 56	50,329 95	6,034 14	44,295 81	14,170 00	30,125 81
New Bedford Tow Boat,	31,245 00	29,330 75	1,914 25	-	1,914 25	2,651 07	736 82 ^d	-	736 82 ^d
Totals,	\$986,694 56	\$853,189 35	\$133,505 21	\$19,530 03	\$153,035 24	\$39,357 88	\$113,677 36	\$100,970 00	\$12,707 36

^d Deficit.

APPENDIX.

APPENDIX.

SPECIAL REPORTS AND ORDERS RELATING TO RAILROADS, STREET RAILWAYS, ELECTRIC RAILROADS, STEAMBOATS, TELEPHONE, TELEGRAPH AND EXPRESS COMPANIES.

MASSACHUSETTS MILK RATES.

Notices of the Boston and Maine Railroad and the New York, New Haven and Hartford Railroad Company relative to proposed changes in rates on shipments of milk, cheese and cream.

P. S. C. 1148.

DECIDED JULY 31, 1917.

CHARLES S. PIERCE and W. A. COLE for Boston and Maine Railroad.

F. A. FARNHAM for New York, New Haven and Hartford Railroad Company.

WHIPPLE, SEARS & OGDEN for H. P. Hood and Sons.

JOHN F. CUSICK for D. Whiting and Sons Company.

EDWIN C. JENNEY and JOHN ALDEN for Alden Brothers Company.

ROBERT M. BURNETT for Deerfoot Farm Company.

JOHN D. WILLARD for Franklin County Farmers' Bureau.

GEORGE ALBREE for himself.

REPORT.

In its annual report to the General Court in January, 1916, the Commission made the following comment upon the situation then existing with respect to the transportation of milk by the railroads operating within the Commonwealth: —

The question of milk transportation has been a bone of contention in the Commonwealth for many years. At the present time there are two distinct systems of transportation, one for intrastate shipments and the

other for interstate shipments. This is due to the so-called "Saunders Act" (St. 1910, c. 633). Section 202 of Part II of chapter 463 of the Acts of 1906, as amended by this Act, is as follows: —

A railroad corporation shall not receive, forward or deliver milk in large quantities over any portion of its line, or permit others so to do, under contract, lease or hiring of cars or otherwise, without at the same time providing, as regards time, care and preservation of the milk and the return of the empty cans, equal facilities and advantages for receiving, forwarding and delivering milk by the can over the same portion of its line; nor without establishing a tariff for the milk by the can which is the *same* rate which it charges or receives as aforesaid for milk in large quantities.

As a result of this legislation, in intrastate business the "open car" system prevails, — that is, the railroads provide cars which they ice and care for and in which they carry the milk of any and all shippers at a uniform rate per can. In interstate business, on the other hand, the "leased car" system prevails. Under this system the milk is carried very largely in cars which are leased at so much per car per year to the so-called "milk contractors", the railroads, in general, operating no cars which they ice and care for themselves and in which milk may be shipped at a uniform per can rate.

It seems to be a prevalent opinion that this dual system operates to the disadvantage both of the milk consumers and of the milk producers of Massachusetts, although views differ as to which of the two systems is the more desirable. Certainly the production of milk in the Commonwealth has steadily decreased in recent years and the supply has been coming into the state from more and more distant points. The claim is made that the "leased car" system tends to give the contractors monopolies in the buying territory and that the transportation charges under this system are relatively lower. It seems to be in use nowhere else in this country; it has apparently always been in disfavor with Massachusetts farmers; it was openly opposed in 1911 by Governor Draper and the Attorney-General; and the Boston Chamber of Commerce, as a result of a recent investigation of the milk situation, has declared against it. On the other hand, the Interstate Commerce Commission in 1912, in the case of *Albree v. Boston and Maine Railroad* (XXII I. C. C. 303), reached the conclusion that the abolition of this system was not at that time wise.

On September 16, 1915, the Boston and Maine Railroad filed with this Commission and with the Interstate Commerce Commission tariffs increasing its rates for milk transportation, both intrastate and interstate. These tariffs were suspended and at a public hearing on November 3, 1915, the Commission opened up the whole question of milk transportation and of the two systems under which it is now conducted. It has also requested the Interstate Commerce Commission to take similar action. In the opinion of the Commission, the decision by the Interstate Commerce Commission in 1912 ought not to be considered conclusive,

but the relative advantages and disadvantages of the "open car" and the "leased car" systems ought to be thoroughly investigated in the light of the experience since that decision, both of milk users and of milk producers, with a view to determining the best system that may uniformly be applied in the public interest both for intrastate and interstate shipments. It seems fairly obvious, also, that that system should prevail which encourages the production and shipment of milk in localities relatively near to the point of consumption.

As a result of the request then made by this Commission and others the Interstate Commerce Commission, which had already suspended the proposed new Boston and Maine rates, reopened the so-called "Albree case" and instituted a general investigation "concerning the rates maintained by common carriers for interstate transportation of milk and cream between points in New England, and the rules, regulations and practices applicable thereto, with a view to determining whether the rates, rules, regulations and practices are unreasonable, unjustly discriminatory, unduly prejudicial or otherwise unlawful," making all the railroads doing an interstate business within New England parties to the proceedings. In this investigation the Attorney-General appeared for the Commonwealth generally and also for this Commission, the Department of Health and the Board of Agriculture. The hearings in Boston continued from February 17 to March 9, 1916. As stated by the Interstate Commerce Commission in its decision, which was rendered on July 11, 1916: —

. . . Widespread interest was manifested in these proceedings. The hearings were largely attended by the general public, and parties engaged in the milk business, producers, and consumers were all represented by able counsel. An exhaustive investigation was had, and it was the expressed wish of all parties that controversy with respect to the transportation in New England of such necessary food products as milk and cream should be set at rest and a harmonious and reasonable adjustment of rates prescribed for the future.

In its decision the Interstate Commerce Commission reached the conclusion that the "charges and regulations maintained by respondents, applicable to shipments of milk and cream in carloads under the leased-car system, unduly prefer the users thereof, and unduly prejudice shippers of the same commodities in less-than-carload lots, and are, therefore, unlawful and may not be maintained for the future." An order was entered pre-

scribing in detail a new basis of less-than-carload rates for the interstate transportation of milk in open milk cars, with the carrier furnishing refrigeration. The carriers were further directed to establish carload rates at $87\frac{1}{2}$ per cent of the less-than-carload rates, and rates in freight train service at 75 per cent of the milk train rates, and were given permission to charge 25 per cent more for cream than for milk. It was further stated in the report, although not prescribed in the order, that rates for service without ice in regular baggage cars on passenger trains should be established "on a somewhat lower basis" than that prescribed for the milk car service.

From the report of the Interstate Commerce Commission in this case the following general conclusions may be drawn: —

(1) *That the Commission believed that the carriers were not obtaining sufficient revenue from the milk business, as a whole, and intended in the new schedule prescribed to provide additional revenue.* — On page 720 it is stated: —

. . . Looking at the charges for the transportation of milk and cream now in effect, and taking into consideration all the special circumstances and conditions surrounding the transportation thereof by respondents, we are of opinion that as a whole they are generally lower than we would be justified in prescribing.

(2) *That the Commission intended to establish a basis for uniform milk rates throughout all New England.* — On page 733 it is stated: —

We here have under consideration only rates applicable to and regulations governing interstate shipments of milk and cream by New England carriers. There is a total absence of uniformity in rates, groupings, and regulations. The chief consuming market for milk produced in New England is metropolitan Boston. Milk and cream transported to that point from all points in New England must be sold in competition. It is important, therefore, that some system of uniformity should be maintained by New England carriers for the future.

(3) *That the Commission believed that the then existing system of rates and charges was unduly discriminatory against the production of near-by milk for the Boston market and intended to remedy this situation.* — On page 730 it is stated: —

The leased-car rates are so grouped and adjusted that the user thereof can go long distances from the city and secure his supply of milk and cream. It is an economic waste to haul milk for long distances if it may

be secured at shorter distances. No rate adjustment can be successfully defended which deprives any shipper of the natural advantage of proximity to point of consumption. The wide spread between the leased-car per can rates and the less-than-carload per can rates have a natural tendency to discourage the production of near-by milk. The present charges per can afforded the leased-car user are so low that he can transport his milk 300 miles at a lower per quart charge than is paid by the less-than-carload shipper whose milk is produced at a point 100 miles from Boston. The result is, of course, that a dairy farm in northern New Hampshire, Maine, Vermont, or even Canada is substantially as valuable for the purpose of supplying milk to Boston as a similar farm one-third the distance therefrom. The dairyman comparatively near to the Boston market who must ship, if at all, in small lots, can not compete successfully with a dealer using leased cars in that market if his shipments require refrigeration to make them conform to the city regulations.

(4) *That the Commission believed that the then existing system of rates and charges tended to encourage a monopoly in the milk business and wished to correct this tendency.* — On page 730 it is stated: —

It is clear from this record that charges and regulations with respect to shipments of milk and cream maintained by respondents, and by all carriers in New England outside the state of Massachusetts, foster and protect the leased-car system and insure to the users of cars under that system practically complete domination of the transportation of those commodities in New England. Milk and cream normally would move in less-than-carload quantities. This is particularly so in New England, with its small dairies and many short lines of railway. The unit of milk and cream shipments is the can. There is not in the schedules of respondents, nor those of any other carrier in New England outside of Massachusetts, any method provided by which the small shipper may have his property transported at charges that bear a reasonable relation to those maintained for the leased-car user.

(5) *That the Commission realized the difficulty and complexity of the problem and regarded the new schedule prescribed as in certain respects experimental.* — On page 737 it is stated: —

The carriers herein involved should keep a detailed record of receipts and expenditures on account of the milk and cream traffic under the new system and rates for the period of one year. At the end of that time, if it appears that the rates and regulations herein prescribed are not reasonable, the matter may be called to our attention by the defendants.

Interstate tariffs purporting to conform to the decision of the Interstate Commerce Commission were filed by the various carriers and became effective on October 1, 1916. At the same time the Boston and Maine Railroad and the New York, New Haven and Hartford Railroad Company filed tariffs with this Commission purporting to establish rates on the same basis for intrastate business within the commonwealth. These latter tariffs were suspended upon complaint, and by successive orders, until August 1, 1917, hearings being held on October 25 and 26, 1916. No similar tariff has been filed by the Boston and Albany Railroad Company, the only other carrier doing a substantial intrastate milk business in Massachusetts.

Upon examination it appears that the situation which now exists interstate, and which would be created intrastate if the suspended tariffs should become effective, differs in important respects from the situation which the Interstate Commerce Commission wished to bring about. In the first place, the tariffs lack the desired uniformity. Apart from the fact that the Boston and Albany has not attempted to adjust its intrastate rates to the new basis, the suspended tariffs of the Boston and Maine and New Haven roads differ materially from the interstate tariffs and also from each other. The scale prescribed by the Interstate Commerce Commission for less-than-carload shipments of milk or cream in open milk cars on milk or passenger trains has, indeed, been followed in all the tariffs; but in other respects there are differences, the more important of which are as follows: —

(1) Carload rates and freight service rates, which are provided interstate in accordance with, and at the reductions prescribed in, the order of the Interstate Commerce Commission, are not provided at all in the suspended intrastate tariffs.

(2) The rates provided in the Boston and Maine suspended tariff for shipments in baggage cars on passenger trains are not applicable "between the points where open iced milk or refrigerator car service is operated", and between such points shipments in baggage cars apparently cannot be made at all. In the New Haven tariffs no such restriction is placed upon the baggage car rates. In the Boston and Maine interstate tariff the restriction appears, but it is also provided that shipments may be made in baggage cars, even where milk car service is operated, if the rates applicable to the latter service are paid.

(3) The Boston and Maine baggage car rates, following the recommendation of the Interstate Commerce Commission, are lower than the less-than-carload rates for milk car service. The New Haven baggage

car rates are higher. Taking, as an illustration, the rates on $8\frac{1}{2}$ -quart cans of milk, they compare with each other and with the standard milk car rates adopted by both roads as follows:—

	Milk Car.	Boston and Maine Baggage.	New Haven Baggage.	
1-20 miles,	3.4 cents.	2.9 cents.	4.9 cents.	1-19 miles.
21-40 miles,	4.2 cents.	3.7 cents.	5.9 cents.	20-49 miles.
41-60 miles,	4.9 cents.	4.4 cents.	—	—
61-80 miles,	5.4 cents.	4.9 cents.	6.9 cents.	50-99 miles.
81-100 miles,	6.0 cents.	5.5 cents.	—	—

The comparative rates on bottled milk carried in baggage cars, taking the 12-quart case as a unit, are as follows:—

	Boston and Maine.	New Haven.	
1-20 miles,	5.7 cents.	10 cents.	1-19 miles.
21-40 miles,	7.3 cents.	12 cents.	20-49 miles.
41-60 miles,	8.6 cents.	—	—
61-80 miles,	9.7 cents.	14 cents.	50-99 miles.
81-100 miles,	10.8 cents.	—	—

(4) The Boston and Maine rates on bottled milk and cream carried in milk cars are higher than the corresponding New Haven rates. The comparison on the basis of the 12-quart case of milk is as follows:—

	Boston and Maine.	New Haven.
1-20 miles,	6.7 cents.	4.8 cents.
21-40 miles,	8.2 cents.	6.0 cents.
41-60 miles,	9.6 cents.	7.0 cents.
61-80 miles,	10.6 cents.	7.7 cents.
81-100 miles,	11.8 cents.	8.5 cents.

(5) The Boston and Maine tariffs provide that “shipments made in cans of a ‘thermos’ or insulated type will be charged for at the regular excess baggage rates for actual weight.” The New Haven tariff contains no such provision. The excess baggage rates on the Boston and Maine are much higher than their special baggage car rates for milk.

(6) At the time of the hearings last October the Maine Central Railroad Company had in effect a tariff applicable within the state of Maine

on shipments made in less-than-carload lots in ordinary freight cars, icing furnished by the shippers, from various points of production to various so-called concentration points, providing a schedule of rates materially lower than that provided for any class of milk or cream shipments by the other New England carriers and evidently issued, not for the sake of direct profit, but rather to encourage the development of the milk industry in Maine. This tariff has since been cancelled, but it appears that a tariff has been substituted which is still open, though in somewhat less degree, to the same comment.

In the second place, it appears that the situation with respect to the production of near-by milk for the Boston market which the Interstate Commerce Commission wished to correct, has not been materially improved, owing to a combination of circumstances the effect of which probably was not foreseen by the Commission and which are as follows: —

(1) *The spread between the rates according to the size of container.* — Until the decision of the Interstate Commerce Commission, milk rates in New England had been constructed upon a uniform per quart basis and no differentials had been allowed in favor of the larger size containers. The Commission departed from this rule and in the schedule prescribed provided for a large variation in the rate per quart, based upon the size of container used. Calling the rate per quart in the so-called 40-quart “jug” 100 per cent, the rates in the different sized containers vary as follows: —

CONTAINER.	Rate per Quart.
50 quart can,	97 per cent.
46 quart can,	98 per cent.
40 quart can,	100 per cent.
21¼ quart can,	105 per cent.
20 quart can,	112 per cent.
10 quart can,	135 per cent.
8½ quart can,	144 per cent.

The 8½-quart can, which carries the highest rate, is the standard can in Massachusetts. It was established, apparently, with the idea that each cow's milk should go into a special can. It has also a further advantage, which was stated by one of the witnesses as follows (Record, pp. 320-321): —

. . . The average farmer in Massachusetts produces milk in smaller quantities than the farmers in Maine, New Hampshire and Vermont. It is often a hardship for him to ship in such large containers as the 40 and 21¼ can, because of his

inability to fill them. That is, he may have milk left over; and with an eight and a half quart can he can fill it, when he cannot fill the twenty-one and a quarter, and he therefore loses the sale of that milk. That is due to the fact that the Massachusetts producer is, on the average, a much smaller producer than the other states.

It seems to be conceded that this size can is, in general, the appropriate and economical container for Massachusetts producers to use. The larger producers in other localities, however, can easily substitute the so-called 40-quart or 50-quart "jugs" carrying the lower rates.

(2) *Reduced rates in freight service.*—Milk in freight service, under the interstate tariff, is transported at rates 25 per cent lower than those prevailing in the milk train service. This reduction, as already stated, is not provided for in the Massachusetts tariffs.

(3) *Reduced carload rates.*—Milk shipped in carloads "from one consignor to one consignee, from one point of origin to one destination" is carried, under the Boston and Maine interstate tariff, at a $12\frac{1}{2}$ per cent reduction under the less-than-carload rates. While no general carload rates are provided in the New Haven interstate tariff, they are provided at the same percentage of reduction between Boston and Providence and between Providence and Worcester. In the suspended intra-state tariffs, as already stated, no such carload rates are provided.

(4) *The intrastate rates of the Maine Central.*—These rates, as already shown, offer a concession to producers which is not given in any other state or in any other tariff.

Even leaving out of consideration the special Maine Central rates, it is evident that the producer shipping interstate into Boston who is in a position to ship carloads by freight service, using 40-quart or larger jugs as containers, has a really enormous advantage over any producer in Massachusetts. The following table shows rates in cents, reduced to the per quart basis, for transporting less-than-carload lots of $8\frac{1}{2}$ quart cans on milk trains, for transporting the same size cans in carload lots on freight trains, and for transporting 40-quart jugs in carload lots on freight trains: —

	C. L. Freight Train (40-Quart Can).	C. L. Freight Train (8½-Quart Can).	L. C. L. Milk Train (8½-Quart Can).
1-20 miles, . . . . .	.187	.262	.400
21-40 miles, . . . . .	.228	.324	.494
41-60 miles, . . . . .	.264	.378	.576
61-80 miles, . . . . .	.295	.417	.635
81-100 miles, . . . . .	.323	.463	.705
100-120 miles, . . . . .	.349	.494	-
121-140 miles, . . . . .	.374	.532	-
141-160 miles, . . . . .	.397	.563	-
161-180 miles, . . . . .	.418	.594	-
181-200 miles, . . . . .	.438	.612	-
201-220 miles, . . . . .	.458	.648	-
221-240 miles, . . . . .	.476	.680	-
241-260 miles, . . . . .	.493	.702	-
261-280 miles, . . . . .	.512	-	-
281-300 miles, . . . . .	.529	-	-
301-320 miles, . . . . .	.545	-	-
321-340 miles, . . . . .	.559	-	-
341-360 miles, . . . . .	.575	-	-
361-380 miles, . . . . .	.590	-	-
381-400 miles, . . . . .	.605	-	-
401-420 miles, . . . . .	.620	-	-
421-440 miles, . . . . .	.633	-	-
441-460 miles, . . . . .	.647	-	-
461-480 miles, . . . . .	.660	-	-
481-500 miles, . . . . .	.673	-	-

This table shows that one quart of milk can be carried 160 miles in a 40-quart jug which is part of a carload lot moving in freight service, for a lower rate than it can be carried any distance, however short, in an 8½ quart can which is part of a less-than-carload lot in milk train service. It further shows that a quart of milk can be carried, even in an 8½ quart can, for 260 miles in carload freight train service for less than it can be carried 100 miles in less-than-carload milk train service, and that it can actually be carried 500 miles, according to the tariff (in actual practice 300 miles is about the limit), for a lower rate in carload freight train service, if a 40-quart jug is used. As above shown, the Interstate Commerce Commission in its report declared that

"no rate adjustment can be successfully defended which deprives any shipper of the natural advantage of proximity to point of consumption," and illustrated the evil of the leased-car system in this respect by stating "that the present charges per can afforded the leased car user are so low that he can transport his milk 300 miles at a lower per quart charge than is paid by the less-than-carload shipper whose milk is produced at a point 100 miles from Boston." In view of the circumstances above set forth, it is evident that the present system of charging is quite as open to this criticism as was the leased-car system.

In determining what action ought to be taken by this Commission with respect to the suspended tariffs, due consideration must be given in the first instance to the fact that these tariffs follow, in general, a schedule prescribed by the Interstate Commerce Commission after a prolonged and thorough investigation. In the field of public regulation the Interstate Commerce Commission is superior in extent of jurisdiction and authority to any state commission, and it is desirable and reasonable that the state commissions should co-operate with the federal body and avoid inconsistent and inharmonious action unless the public interest very clearly demands a different course. In the present instance, however, it definitely appears, as has already been shown, that the Interstate Commerce Commission did not regard its action as final, but rather, in certain respects at least, as experimental, and recognized the fact that after a year's trial it might prove that some of the rates and regulations prescribed were not wholly reasonable. While, therefore, this Commission would hardly be justified, upon present evidence, in requiring any change to be made in the intrastate tariffs which would be fundamentally inconsistent with the decision of the Interstate Commerce Commission, it would be justified in requiring changes in harmony with the spirit and intent of that decision and tending to promote general results which the Commission wished to accomplish.

The influence of the rate situation upon the milk and farming industry of Massachusetts is also worthy of consideration. At present, not more than 15 per cent of the milk consumed in Massachusetts is produced within its boundaries. The decline which has taken place in recent years in the number of cows in Massachusetts and in the quantity of milk produced has, in fact, been cause for alarm, not only to those who are interested in the supply of fresh and wholesome milk for the metropolitan district,

but also to those who are concerned with the proper development of the agricultural interests of the commonwealth. As an illustration, the fact may be cited that the Boston and Albany railroad in the months of April, May and June, 1906, brought 5,116,005 quarts of milk into the Boston metropolitan district, while in the same months this year it brought but 1,837,299 quarts. If the rates for transporting milk in any way discriminate unfairly against the farmers of Massachusetts, it is clearly the duty of this Commission to take any proper and reasonable action within its power which will tend to remove such discrimination.

After a careful consideration of the evidence, it seems to this Commission that certain changes can and should be made in the suspended intrastate tariffs with a view, in the first place, to securing greater uniformity and with a view, in the second place, to improving certain important details which, in their present form, are unduly discriminatory and prejudicial to the interests of Massachusetts producers. It also seems that, if these changes are made, the situation will be more nearly consistent with the general intent and purpose of the federal commission than it would otherwise be. Taking them up one by one:

VARIATION IN CAN RATES.

The departure from the uniform per quart basis of charging for milk transportation which had theretofore prevailed was not made by the Interstate Commerce Commission, so far as the record shows, as the result of any demand voiced at the hearings before it or of any extensive investigation, but was based upon reasons which seem at first thought impressive but upon analysis lose much of their force. These reasons were stated in the report of the Commission as follows (page 734): —

Rates on different sized cans are now based on the contents, although the use of the smaller cans involves additional labor in handling, greater use of floor space in cars, extra icing, accounting, etc. We have computed the rates in the above scale on the basis of measurements of the cans, and have taken into consideration other elements that justify somewhat lower per quart rates in larger containers.

To test the theory thus set forth, the Rate and Tariff department of the Commission was directed to make a careful investigation of the facts and the results of this investigation were given at the public hearing.

The containers most commonly used are the $8\frac{1}{2}$ -quart can and

the 40-quart jug. It appears that the weight of an empty 40-quart jug varies between 20 and $27\frac{1}{2}$ pounds, while an empty $8\frac{1}{2}$ -quart can weighs $5\frac{1}{2}$ pounds. The dead weight carried per quart of milk, therefore, varies between .5 pounds and .69 pounds in the one case and .65 pounds in the other, the difference, for all practical purposes, being negligible. When the containers are full, the 40-quart jugs will load in a single tier about 93 pounds to the square foot of floor space, while the $8\frac{1}{2}$ -quart cans will load about 55 pounds. In the latter case, however, it is the practice, by the use of so-called "deck boards" placed upon the top of the first tier, to load the cans in a double tier and in this way a load of over 110 pounds to the square foot can be obtained, or more than the load practicable in the case of the 40-quart jug. The relative cost of handling, it seems, is largely dependent on local conditions. If the milk car is run close to a platform even with the car floor, the same amount of milk can probably be rolled into the car in the 40-quart jugs in somewhat less time, but if the milk has to be raised from the level of the ground, as is often the case, the smaller cans can probably be handled quite as easily. It is also true that a very large proportion of the Massachusetts intrastate shipments are loaded while the cars are standing and before the engine is connected, so that the element of train delay would not be present in any event.

These facts lead to the conclusion that, while there may be some variation in the cost of transporting milk according to the container used, the variation is too slight to be used in reasonable rate-making as the basis of any substantial difference in the charges levied. Certainly it is not large enough to justify the wide spread in rates prescribed by the federal commission. This conclusion is supported by the evidence of the carriers themselves. The following comments are taken from the brief filed in behalf of the Boston and Maine Railroad:—

The Boston and Maine Railroad has always made its rate for milk in larger cans exactly proportionate to that for the $8\frac{1}{2}$ -quart can, and believes that policy to be sound in principle. At the hearings before the Interstate Commerce Commission no criticism was made of that practice, and consequently it did not seem necessary to defend it (p. 20).

.

The result of the application of these principles is to make rates on 40-quart cans of milk but 3.3 times the rate for $8\frac{1}{2}$ -quart cans, which is not warranted by the testimony, and is contrary to the universal practice of making rates according to the amount of the commodity carried. (pp. 20-21).

At the hearing the general passenger agent of the New Haven road expressed a similar opinion, as follows: —

We think, if anything, that there should be a higher charge for a 40-quart can. We believe you can handle five 8-quart cans easier and better than you can a 40-quart can, especially if you have got to lift it from the ground to the car. (Record, p. 272.)

When I spoke of handling the 8½-quart can and the 40-quart can, I had in mind our own layout on the New Haven road. We have very few platforms, and I think it was demonstrated very clearly that we can handle the 8½-quart cans better than the 40-quart cans on our line. I saw this being done on the Boston and Maine Railroad at Winchendon the other day. A man takes two in each hand and walks right out and places them down, so that the man in the car takes them in the same way, and it is almost a continuous motion; whereas, when you take a big 40-quart can, which weighs 115 pounds, even if you roll it, you have got to roll it reasonably slow, and you cannot begin to make the time with a 40-quart can that you can with five 8½-quart cans. I watched that two weeks ago at Winchendon. On our line we have very few elevated platforms, so that the 40-quart cans have got to be lifted into the car. (Record, p. 304.)

Under the circumstances it seems to us that this is a matter which the Interstate Commerce Commission may be expected to take up at the end of the trial period of one year, with reasonable probability that a change will be made in the prescribed basis of rates. In the meantime, the producers of Massachusetts are suffering from an unjust discrimination which this Commission is warranted in correcting, so far as feasible, in the intrastate tariffs now under suspension. The carriers argue that, if any change is to be made in the adjustment of rates, the 40-quart jug rates are too low and ought to be raised to the 8½-quart can level. While it may, perhaps, be true that these rates are low, such a change would still leave the Massachusetts producer at an unfair disadvantage in comparison with the producer shipping in 40-quart or larger jugs from outside the state, and would thus be of little practical benefit. So long as the carriers, for whatever reason, continue to use this lower basis of rates in the interstate traffic, we think that this Commission is justified in requiring the discrimination now present in the suspended tariffs to be cured in the only practicable way, by reducing the rate for the 8½-quart can to the 40-quart jug level and by making the rates for all containers relatively uniform upon this basis. Massachusetts producers are entitled to this protection and it is not

only in their interest but in the ultimate interest, we believe, of the carriers themselves. The rates for the 40-quart jug, rather than the 46-quart or the 50-quart, have been taken as the basis, as these latter containers are not in common use.

BAGGAGE CAR RATES.

Shipments in baggage cars play an important part in the movement of milk in Massachusetts. This is shown by the following extract from the brief filed by the Boston and Maine Railroad in the case before the Interstate Commerce Commission (pp. 9-10): —

Milk and cream are shipped on the Boston and Maine Railroad in the regular baggage cars attached to passenger trains, no icing service being furnished. The cans are loaded and unloaded by station employees and handled in the car by the train baggage-master, each shipment being accompanied by its own billing. There is a heavy volume of this traffic, as will be seen from the fact that for a typical month (August, 1915) the movement equaled 18,705,882 can miles. The revenue from this traffic for the last fiscal year amounted to \$115,991.37 (Hall Exhibit 19). These baggage-car shipments move freely over all parts of the system (Pierce Exhibit 1). A considerable quantity moves for distances of over 150 miles, being precooled in hot weather and shipped in cans protected by felt insulating jackets. The extent of the movement is further shown by the fact that during one day (August 11, 1915) there were 608 separate shipments on the Boston and Maine Railroad, these going from 248 different shipping points to 158 different destinations. The average number of receptacles per shipment was 8.

This service is particularly important to the producers of Massachusetts situated, as they are, near to their market, as it provides a convenient and expeditious means of transporting milk in small lots short distances where icing is not a factor, or over routes upon which it is not profitable for the roads to establish regular milk train service. It is apparent that its importance was not appreciated by the Interstate Commerce Commission, as no definite provision was made for such shipments in the order entered, and as the matter was covered only in the report and in that very briefly.

Serious complaint has been made to the Commission against the restriction in the suspended Boston and Maine tariff which limits baggage car service to routes on which no milk or refrigerator cars are operated. If this became effective, it would do away with this service on certain routes where it has hitherto

been provided. Various producers have claimed that the result would be a serious disarrangement of their business, that prompt deliveries can be secured through the baggage car service, which are essential to a profitable marketing of their product, and that use of the milk train service would result in delay and inconvenience which would prove a serious detriment. On the other hand, the carrier claims that the restriction is reasonable, since a milk train cannot be economically operated unless it is generally and uniformly used by producers upon its route. If the two forms of service are provided, experience has shown, the company states, that shippers will use the iced service, with its higher rates, only when the weather compels and will use the cheaper baggage car service at all other times. It suggests, however, that the difficulty can be obviated and complaint satisfied by an amendment of the tariff allowing shipments in baggage cars at the iced-car rate when iced-car service is available. Such an amendment has been made, since the date of the hearings, in the interstate tariff. In our opinion it meets the situation with substantial justice to all concerned and should be made in the suspended intrastate tariffs as well.

A further objection to the baggage car rates in the suspended tariffs is that they are not uniform, the New Haven rates being considerably higher than the Boston and Maine rates. There is no good reason why producers to the south of Boston should pay a different rate than producers to the north. As the Interstate Commerce Commission has stated, milk and cream transported to Boston from all points must be sold in competition and uniformity in rates is clearly desirable. The New Haven road urges that the fact that the rates which it now proposes are substantially the same as the rates which have been in effect for years without formal complaint, is evidence that they are reasonable and that, if any change is to be made, the Boston and Maine rates should be raised rather than its own rates lowered. This, however, would not remove the discrimination with respect to interstate traffic. So long as either of the roads maintains the lower level of rates in its interstate tariffs, in our judgment the baggage car rates for shipments of milk or cream, whether in cans or in bottles, should be made uniform upon this basis. It is also the stated opinion of the Interstate Commerce Commission that the baggage car rates should be somewhat lower than the milk car rates.

If the New Haven baggage car rates are lowered in this manner, it seems reasonable that the company should not be com-

pelled to carry, at the new rates, containers or receptacles other than those of the usual types, and that it should be permitted to charge the ordinary excess baggage rates for receptacles which require extra care in handling or occupy substantially more than the normal amount of space. The Boston and Maine, as shown above, has already provided a rule of this sort, but it is, in our opinion, somewhat too broad in its application. There seems no sufficient reason, for example, for increasing the rate merely because an insulated jacket is added to a can of ordinary type. The matter may be taken up in conference with the Rate and Tariff department of the Commission, however, and any rule which, after such consideration, seems reasonable to the Commission, will be permitted.

CARLOAD RATES.

Both the New Haven and the Boston and Maine, as already stated, provide carload rates in their interstate tariffs which are not provided in the suspended intrastate tariffs and which involve a reduction of $12\frac{1}{2}$ per cent under the less-than-carload rates. It is urged by the Boston and Maine, although not by the New Haven, that the so-called "Saunders Act" (St. 1910, c. 633), to which reference has already been made, makes the granting of such carload rates within the Commonwealth unlawful. To pass upon this claim, some consideration and interpretation of the "Saunders Act" is necessary.

This statute was directed against the so-called "leased-car" system, under which contractors were given the exclusive use of a car at so much per car per year according to the mileage covered, an arrangement which often placed small producers practically at the mercy of these contractors. It probably was not thought by the framers of the law that it would stand in the way of a reasonable application of the principle, practically universal in railroad rate-making, that carload shipments are entitled to a lower rate than less-than-carload, being far less expensive to handle. Nevertheless, it is our opinion that the statute probably does prohibit the granting of lower rates per car for carload quantities, *where equal facilities are provided*. An inspection, however, of the present interstate tariffs, which do not permit the old "leased car" system, shows that the same facilities are not provided for carload shipments that are provided for less-than-carload. In the latter case the loading, unloading and icing service is assumed by the carrier, while in the

former it is required of the shipper or consignee. Under such circumstances the reduction in rate may be regarded as compensation for reduction in facilities granted, rather than as a concession to shipments in large quantities. Nor will it be claimed, we think, that the Saunders Act stands in the way of a reasonable reduction in the per can rate to the man who is willing to ship a carload lot to one consignee from one point of origin to one destination and who is also willing, at the same time, to assume the duty of loading, unloading and icing his shipment.

As to the desirability of a carload rate, there seems to be no disagreement. The Boston and Maine believes in such a rate (Record, p. 312) and is of the opinion that there is quite a little tonnage "which would develop into a carload business if under the Saunders Act we were permitted to carry a carload basis lower than the less-than-carload." (Record, p. 221.) The New Haven is in no way opposed to such a rate and has, indeed, taken the position that the Saunders Act is no obstacle. Mr. George Albree, who has been one of the foremost opponents of the old leased-car system, also favors a wholesale rate and stated his position at the public hearing in the following language (Record, pp. 307-308): —

I advocate absolutely a wholesale rate for transporting milk on the trains reaching Boston, and that the wholesale rate shall be substantially the same as that in force in transporting milk in New York, and that reduction is practically 12 or 15 per cent. That is, having established a per can rate, they multiply the number of cans by the capacity of the car, and from that deduct 10, 12 or 15 per cent.

Under the circumstances, we are of the opinion that the same carload reduction which is offered in the interstate tariffs and which has been found by the Interstate Commerce Commission to be reasonable and under which a shipper or consignee assumes the labor and expense of loading, unloading and icing the shipment, may lawfully and reasonably be made in the intrastate tariffs, and that this change should be made in the tariffs which have been suspended.

FREIGHT SERVICE RATES.

As already stated, the Boston and Maine, following the order of the Interstate Commerce Commission, offers in its interstate tariffs a reduction of 25 per cent below the regular rates, not only for carload shipments moving in freight cars on freight

trains, but also for similar less-than-carload shipments, providing ice for the latter when necessary. No such reduction is offered in its suspended intrastate tariff, nor is it offered by the New Haven either interstate or intrastate. The only reason submitted for these omissions, as we understand the situation, is that such service is practicable and advantageous to shippers of milk only when fast through-freight trains are available for use, and that such trains cannot, as a practical matter, be used for intrastate shipments in Massachusetts. It is claimed that the only freight service which could be used for such shipments is of the slow and uncertain way-freight type and would prove wholly unsuitable to the needs of the milk producers.

Even assuming that the facts are as stated by the carriers, they are not, in our judgment, a sufficient reason for the failure to offer the reduced rates in the intrastate tariffs. No harm in any event can be done by providing these rates. If the freight service available is unsuitable for the purpose and cannot reasonably be made suitable, producers will not ship their product under these rates. On the other hand, the offering of the rates will make possible a practical test of the situation and a demonstration of the facts in actual experience. It seems to this Commission possible that, if the rates are offered, shippers may be able, through proper co-operation and a readjustment of delivery points, to avail themselves of a suitable freight service, in certain instances at least. At all events, a change in accordance with this ruling should be made in the suspended tariffs.

For the present, in view of the finding of the Interstate Commerce Commission, we assume that this reduction in favor of the freight service is reasonable and does not constitute an unjust discrimination. The matter, however, is one which the Interstate Commerce Commission may reasonably be expected to take up and consider at the end of the trial period of one year and, without undertaking to express any final opinion at the present time, there is at least, in our judgment, a basis for a claim that the reduction is inherently unfair. As it now operates, certain shippers of milk who happen to be located at or near some point served by the fast through-freight trains secure, at a materially lower rate, an expedited service into Boston which is equal to or better than any service afforded by the regular milk trains, and in this way they obtain a decided advantage over other shippers not so fortunately located. It may be, although the evidence upon this point so far submitted is not wholly convincing, that

it is possible to demonstrate that this fast freight service can be provided at less cost to the carrier than the milk train service; but the railroads of the country have always been the first to claim that cost of service is but one factor to consider in fixing reasonable rates. Another factor which they have always considered as important, is the value of the service furnished. In this instance it is reasonably clear that those who now ship milk on the fast freight trains secure a service fully as valuable as that offered by the milk trains. This seems to have been the position taken by the Boston and Maine when, in the tariff filed in 1915 with the Interstate Commerce Commission, it made no distinction in rates between the freight and milk train service, a position stated in its brief filed in that case as follows (pp. 94-95): —

Of course, it is not intended to argue from these instances that the passenger service is not in the main faster than the freight service, but it is believed that these cases do show that the exceptions are so numerous as to make the matter one for serious consideration. It would seem that the shipper whose car is transported entirely in passenger service, but is subjected to a long wait at a junction point, is no better off in the end than his competitor whose car, moving in freight service, gets an immediate connection at the junction point (as in the case of the Maine Central traffic) and makes an equally long trip in the same time. It is obvious, of course, that the present difference in the rates for the two services constitutes no unjust discrimination, as Professor Cunningham's figures substantiate clearly the generally accepted fact that the operating expense per unit is greater in the passenger than in the freight service. It is believed, however, that, with the extensive use now made of through fast freight trains for the milk traffic, the rates for both services should be the same.

The best available trains are used for the movement of this traffic, and the carriers, having shown the proposed basis to be reasonable for fast freight service, are willing to waive their undoubted right to the separate and higher compensation which the use of passenger service entitles them to receive. This is done in order that there may be uniformity in the charge and a nearer approach to complete equity in the general relation of rates and service — a field in which absolute equity is impossible.

SHIPMENTS IN BOTTLES.

This is a minor matter but one in which, for the reasons already stated, uniformity is desirable. At present, in the suspended tariffs, the Boston and Maine rates upon bottled milk or cream carried in milk or refrigerator cars are distinctly higher

than the similar rates offered by the New Haven. No good reason has been advanced for this lack of uniformity. There may, indeed, be basis for a claim that the Boston and Maine rates in this instance are more logical and better proportioned to the cost of service, but so long as either of the roads maintains the lower level of rates for interstate shipments, Massachusetts producers are entitled to protection and this can only be afforded by reducing the Boston and Maine rates to the New Haven level. The rates upon bottled milk and cream carried in baggage cars have already been considered and no further discussion is necessary.

BOSTON AND ALBANY RATES.

Inasmuch as the Boston and Albany Railroad Company, after the decision of the Interstate Commerce Commission, did not file with this Commission a new intrastate tariff, it was not made a party to the present proceedings. It now charges within the state a uniform rate of 5 cents per $8\frac{1}{2}$ -quart can of milk, regardless of mileage, and has but two rates for the 40-quart jugs, 23 cents for the shorter distances and 26 cents for the longer. All three rates are substantially the same when reduced to the per quart basis, there being no such variation according to the size of the container as has been prescribed by the Interstate Commerce Commission. Cream is carried at the same rate as milk. It will be seen that the $8\frac{1}{2}$ -quart can rate is somewhat higher for the short distances and somewhat lower for the longer distances than the standard rates fixed by the Interstate Commerce Commission, while the 40-quart jug rates are uniformly higher for all distances upon which intrastate traffic moves. If the Boston and Maine and New Haven rates within the state for the $8\frac{1}{2}$ -quart cans are reduced to the per quart basis of the 40-quart jug rates, as provided in the order which is entered below, it will leave the Boston and Albany with a generally higher level of rates for its milk train service, except in the case of cream. The baggage car rates upon the Boston and Albany are a fraction of a cent higher in all cases than the proposed Boston and Maine rates, but lower than the proposed New Haven rates, which, however, will be brought to the Boston and Maine level under the order entered below. No freight car service is offered by the Boston and Albany and no reduction is made on carload lots.

These Boston and Albany rates, it seems, were approved in the past by the board of railroad commissioners and have been

the source of little complaint. At the same time, it is desirable, as already stated, that the rates of all the roads in Massachusetts should be uniform and it seems to us reasonable that the Boston and Albany rates should conform to the standard fixed by the order entered below for the New Haven and Boston and Maine roads, a standard which is just and reasonable in view of the existing situation with respect to interstate rates. Such action is strongly recommended. If the Boston and Albany, however, is unwilling to make the change voluntarily and desires a public hearing, the Commission is prepared to enter upon formal proceedings upon its own initiative.

THE MAINE CENTRAL RATES.

It has been urged, in view of the very low rates for certain intrastate shipments in Maine which have been fixed by the Maine Central Railroad Company in its special tariff, that this Commission ought to prescribe similarly low rates within Massachusetts. These Maine Central rates, however, are inconsistent with and lower than any of the rates found to be reasonable by the Interstate Commerce Commission. It also seems to be true that traffic conditions are more favorable in certain respects for such rates in that state than they are in Massachusetts. While it may be the carrier has the privilege, if it so desires, of making rates upon its own initiative which are not in themselves remunerative and which are established for the purpose of developing some particular industry, it is very doubtful, in our judgment, whether it is within the power of a public commission to require such rates to be made. This seems to have been the opinion of the United States Supreme Court in *Southern Pacific Company v. Interstate Commerce Commission*, 219 U. S. 433.

SUMMARY.

If the suspended intrastate tariffs on the Boston and Maine and New Haven roads were allowed to become effective without change, they would, in connection with the existing interstate tariffs, extend and intensify a situation which is unfair and prejudicial to Massachusetts producers of milk. Before they are permitted to become effective, therefore, the following changes should be made: —

(1) *All* rates for the transportation of milk and cream in cans should be constructed upon a uniform per quart basis, using for this purpose the

rates per quart prescribed by the Interstate Commerce Commission for 40-quart jugs.

(2) Baggage car rates should be made uniform upon the basis adopted by the Boston and Maine, subject to the above condition.

(3) Provision should be made for un-iced baggage car service, even upon routes where milk cars are operated, but in the latter case the same rate should be charged as for iced shipments in the milk cars.

(4) Ordinary excess baggage rates should be charged in the case of receptacles shipped in baggage cars which require extra care in handling or occupy substantially more than the normal amount of space.

(5) Carload rates should be established at $87\frac{1}{2}$ per cent of the less-than-carload rates where the shipper or consignee assumes the work of loading, unloading and icing shipments.

(6) Rates in freight train service should be established at 75 per cent of the rates for milk or passenger train service.

(7) Rates on bottled milk and cream transported in milk cars should be made uniform, on the basis adopted by the New Haven road.

(8) Existing Boston and Albany rates should be adjusted to correspond to the rates herein prescribed for the Boston and Maine and New Haven roads.

In our judgment the changes indicated can be made in the suspended tariffs without violation of the spirit and intent of the recent report of the Interstate Commerce Commission. It is to be understood, however, that if the carriers avail themselves of the opportunity which is open to them under the report of the Interstate Commerce Commission and secure adjustments of the interstate rates at the end of the one year period, after a thorough investigation, they will be at liberty to bring the matter again to the attention of this Commission for renewed consideration. The present decision is founded upon an effort to secure uniformity in the Massachusetts tariffs and also to protect the shippers of this state against a situation created by the existing interstate tariffs which is unfairly prejudicial to their interests.

ORDER.

Notices of Boston and Maine Railroad and New York, New Haven and Hartford Railroad Company relative to proposed changes in rates on shipments of milk, cheese and cream.

It appearing that by orders dated respectively, September 21 and September 28, 1916, and subsequent orders, the Commission suspended until August 1, 1917, a schedule designated Boston and Maine Railroad, M. P. S. C. No. 213 and a schedule designated New York, New Haven and Hartford Railroad Company, M. P.

S. C. No. 257, and entered upon an investigation concerning the propriety of the increases and the lawfulness of the rates, regulations and practices proposed in said schedules;

It further appearing that a full investigation of the matters and things involved has been had, and that the Commission, on the date hereof, has made and filed a report containing its findings of fact and conclusions thereon, which said report is hereby referred to and made a part hereof, it is

Ordered, That the carriers respondent herein, and designated in said schedules, namely, the Boston and Maine Railroad and the New York, New Haven and Hartford Railroad Company, be, and they are hereby, notified and required to cancel, on or before August 1, 1917, the rates, charges, practices and regulations stated in the schedules specified in said orders of suspension. It is

Further ordered, That said respondents be, and they are hereby, notified and required to cease and desist, on or before September 15, 1917, and thereafter to abstain, from publishing, demanding, or collecting their present rates for intrastate transportation within the Commonwealth of Massachusetts of milk, cream, evaporated milk, condensed milk, buttermilk, skim milk, and pot cheese, in cans and in bottles, which rates have been found by the Commission to be unjustly discriminatory and unreasonable. It is

Further ordered, That said respondents be, and they are hereby, notified and required to establish, on or before September 15, 1917, upon not less than five days' notice to this Commission and to the general public by filing and posting in the manner prescribed in section 20 of chapter 784 of the Acts of 1913, and thereafter to maintain and apply to the intrastate transportation within the Commonwealth of Massachusetts of the aforesaid commodities, in cans and bottles:—

(1) For shipments in cans, in less than carloads, in milk or refrigerator cars, moved in milk, passenger, or in mixed freight and passenger trains, heated in winter and iced in summer, rates in cents per can, which shall include the return of the empty containers, which shall be exactly proportional, according to the capacity of the container used, to the rates for 40-quart-cans now demanded and collected by said respondents for similar interstate transportation, in accordance with schedules designated Boston and Maine Railroad I. C. C. No. 4076 and New York, New Haven and Hartford Railroad Company I. C. C. A-1447;

(2) For similar shipments in bottles, rates in cents per case, which shall include the return of the empty containers, which shall not exceed the rates for such shipments now demanded and collected by the respondent, the New York, New Haven and Hartford Railroad Company, for similar

interstate transportation, in accordance with the schedule designated New York, New Haven and Hartford Railroad Company I. C. C. A-1447.

(3) For shipments, in cans and bottles in carloads, loaded and iced by the shipper and unloaded by the consignee, from one point of origin to one destination and from one consignor to one consignee, rates in cents per can and per case, which shall include the return of the empty containers, no higher than $87\frac{1}{2}$ per cent of those herein prescribed for shipments of the same articles in less than carloads;

(4) For shipments, in cans and bottles, in freight cars, moved from point of origin to destination in freight trains, in carloads without ice, and less than carloads with ice when necessary, rates in cents per can and per case, which shall include the return of the empty containers, not to exceed 75 per cent of those above prescribed for shipments in passenger equipment moving in passenger, freight, or in freight and passenger trains;

(5) For shipments, in cans and bottles, in regular baggage cars on passenger trains, without ice, rates in cents per can, which shall include the return of the empty containers, which shall be exactly proportional, according to the capacity of the container used, to the rates for 40-quart cans now demanded and collected by the respondent, the Boston and Maine Railroad, for similar interstate transportation, in accordance with the schedule designated Boston and Maine Railroad I. C. C. No. 4076, and rates in cents per case, which shall include the return of the empty containers, which shall not exceed those now demanded and collected by the respondent, the Boston and Maine Railroad, for similar interstate transportation, in accordance with the aforesaid schedule, to wit, Boston and Maine Railroad I. C. C. No. 4076: *provided, however*, that when such shipments are between points where there is open iced milk or refrigerator car service, the rates may equal the rates applicable to such milk or refrigerator car service, and *provided, further*, that, in the case of cans or cases which require more than usual care in handling, or occupy relatively more than the normal amount of space, the rates may, subject to the approval of this Commission, be the ordinary excess baggage rates.

All the rates, charges, regulations and practices herein prescribed are found to be just and reasonable under existing conditions.

It is

Further ordered, That copies of this order be filed at the office of the Commission with the schedules herein ordered to be cancelled, and that copies hereof be forthwith served upon the Boston and Maine Railroad and the New York, New Haven and Hartford Railroad Company.

By the Commission,

ANDREW A. HIGHLANDS,

Secretary.

BAY STATE RATE CASES.

In the matter of the proposed withdrawal by the Bay State Street Railway Company of special tickets in the city of Fall River.

SAMUEL H. PILLSBURY }
SHELDON E. WARDWELL }
GEORGE GRIME for City of Fall River.

ISRAEL BRAYTON for Fall River Chamber of Commerce.

On September 7, 1915, the Bay State Street Railway Company notified the Commission of a proposed increase in passenger fares on the whole of its system in Massachusetts. The proposed schedule was subsequently suspended until September 1, 1916, and after an extensive investigation the Commission, on August 31, 1916, filed its report and order finding that the revenues of the company were inadequate, cancelling the proposed schedule and authorizing the company to file a new schedule increasing its unit fare from five to six cents throughout its entire territory, except in the larger cities. The schedule originally filed provided for the withdrawal of all existing reduced fare tickets other than half-fare tickets for school children. In regard to this matter the Commission made no definite finding, but in its decision reserved "the right, before approving any new schedule of fares, to consider the propriety and advisability of the discontinuance of such concessions in certain cases."

On September 18, 1916, the company filed with the Commission a new schedule proposing to withdraw the existing concession under which passengers within the city limits of Fall River are entitled to purchase six tickets for twenty-five cents, each ticket good in place of a five-cent fare. This withdrawal, if allowed, it is estimated will result in a yearly increase in earnings of from \$45,000 to \$55,000 (Record, p. 6001). Upon request of representatives of the City of Fall River, the operation of this schedule was suspended until December 1, 1916, and subsequently to March 15, 1917. Several hearings were held at which certain evidence, which was regarded as supplementary to that of the main case, was submitted by the company and by the City.

In the consideration of this matter the history of the present ticket concession is of importance. The Bay State Street Railway Company is the successor, in Fall River, of the Globe Street Railway Company, which was incorporated as a horse railway under the general law in 1880. On October 21, 1895, the Globe Street Railway Company was granted by the board of aldermen of Fall River a location upon the highway portion (within the limits of the city) of the Slade's Ferry bridge, across the Taunton river, which connects Fall River with the town of Somerset. This location was granted upon certain conditions, among which were requirements that the company should strengthen the bridge to the satisfaction of the city engineer and keep the roadway in repair, and the following:—

This grant is made on the further condition that the said Globe Street Railway Company will sell six tickets for a sum not exceeding twenty-five cents, — each of which tickets shall entitle a passenger to one ride over said Company's lines, in this city, on as favorable conditions as their passengers are now carried. The fares for passengers without tickets are not to be affected by the above rate for tickets.

In 1910, the question of rebuilding the Slade's Ferry bridge arose, and chapter 654 of the Acts of 1910 was enacted, authorizing the reconstruction of the bridge and providing, in section 6, that any street railway company owning tracks thereon should have the right to lay double tracks upon the reconstructed highway portion, "subject, however, to all the conditions as to fares and other matters mentioned in the grant of location to the Globe Street Railway Company by the board of aldermen of the City of Fall River in the year 1895, on the old Slade's Ferry bridge, so far as the same are applicable or lawful." In the following year, the General Court repealed the words "so far as the same are applicable or lawful" and substituted the words, "which are hereby approved and confirmed; and all successors or assigns of said Globe Street Railway Company shall be bound by and subject to the said conditions" (St. 1911, c. 552). The reconstruction of the bridge thus provided for has, however, not as yet taken place.

Because of this history of the existing ticket concession, the City of Fall River has asked the Commission to make, among others, the following rulings:—

That the Bay State Street Railway Company cannot lawfully withdraw from sale six tickets for twenty-five cents, each of which tickets shall entitle a passenger to one ride in Fall River.

The Public Service Commission Act, so called (chapter 784, Acts of 1913), did not and could not under the constitutions and laws of this Commonwealth and of the United States destroy the agreement or contract made by and between the City of Fall River and the Globe Street Railway Company, or claimants under that company, respecting rates of fares for passengers.

The Public Service Commission has no authority to approve the schedule proposed, unless the general law creating the Public Service Commission and establishing and defining its powers and duties (chapter 784, Acts of 1913) specifically repealed or modified chapter 552, Acts of 1911, which was a special act.

Similar requests for rulings were made by the Fall River Chamber of Commerce.

In the general case involving the fares of this company, decided on August 31, 1916, the Commission considered the effect of restrictions relative to fares contained in location grants, and decided that, in view of the decision of the Supreme Court in *Board of Survey of Arlington v. Bay State Street Railway Company*, 224 Mass. 463, the "legal right of the Commission to permit an increase of fares, notwithstanding the terms of local franchise grants, is clearly established." It went on to say: —

In at least two instances, the fare which the Bay State company may charge appears to be limited, not by local agreement, but by direct legislative enactment. As successor of the Lowell and Suburban Street Railway Company, it is prohibited, by chapter 163 of the Acts of 1890, from charging more than five cents for any ride within the limits of the city of Lowell. Certain fare limitations in the city of Fall River were also imposed by chapter 552 of the Acts of 1911. The Commission is of the opinion that, as the acts establishing these limitations were not expressly excepted in the Public Service Commission Act, they were repealed by the provisions of section 29, which reads, in part, as follows: —

Except as above provided, all acts and parts of acts inconsistent with any provision of this act and all acts and parts of acts which would in any way limit or prevent the exercise to the fullest extent of any of the jurisdiction, powers, authority or discretion delegated herein to the commission, are hereby repealed.

It is impossible to give the act a narrow or constricted construction as to the subject of fares. (See *Board of Survey of Arlington v. Bay State Street Railway Company*, *supra*.)

The remonstrants now ask the Commission to modify this ruling, so far as it relates to the condition relative to fares in the city of Fall River, which was approved and confirmed by chapter 552 of the Acts of 1911, upon the ground that the decision in

the Arlington case is inapplicable. They apparently concede that, in granting locations to street railway companies in the public streets, municipal authorities are merely acting as agents of the Commonwealth under delegated authority, and that any restrictions imposed in such grants are subject to amendment and repeal by the paramount authority of the General Court. As the Supreme Court said in *Springfield v. Springfield Street Railway Company*, 182 Mass. 41, pp. 47, 48, "It seems to us that the locations given to street railway companies in the public streets by cities and towns in this commonwealth, do not constitute contracts, or if they do, that they are of such a nature that the Legislature can modify or annul them without thereby violating the constitutional provision." The remonstrants claim, however, that in this case the municipality was not granting a franchise to a street railway company over a public highway, nor acting under authority delegated by the General Court, but rather exercising proprietary rights in contracting for the use of a bridge of which it was and is part owner.

With this contention the Commission is unable to agree. The statute under which the Slade's Ferry bridge was constructed (St. 1872, c. 295) expressly provides in section 1 that "upon the completion of said bridge that portion thereof adapted to highway purposes shall thereupon become a public road and highway." The location upon the bridge was granted in the same manner as the locations of the Globe Street Railway Company in the public streets of Fall River. In fact, locations in the streets leading to the bridge were granted at the same time and in the same order. It is clear that the city was acting under and pursuant to the authority delegated to it by the Legislature, relative to the use of public ways, and that it was merely granting to the company a location upon that portion of the bridge which had been set apart by the General Court as a "public road and highway" and was not contracting for the use of property which it owned in its proprietary capacity. As a matter of fact, the bridge was built by the Old Colony Railroad Company, the upper deck being used exclusively for railroad purposes, with the provision that one-fourth part of the "equitable cost" of the entire structure should be assessed in the first instance upon the county of Bristol and later apportioned, upon completion, in part to the county and in part among the cities and towns benefited. Moreover, the right of the company to locate its tracks upon the bridge is in part dependent upon a grant of the town of Somerset, into whose territory the bridge extends.

According to the view taken by the Supreme Court in the Arlington case, it was the intention of the General Court in the Public Service Commission Act (St. 1913, c. 784) to give the Commission unfettered control over the rates and service within the Commonwealth of all street railways except the Boston Elevated Railway Company, which expressly remains subject to the provisions of chapter 500 of the Acts of 1897. In addition to section 29, above quoted, which repeals all acts or parts of acts "which would in any way limit or prevent the exercise to the fullest extent of any of the jurisdiction, powers, authority or discretion delegated herein to the Commission," section 19 of the act contains this explicit provision: —

. . . The commission shall not be prevented from taking such action as it may deem proper by any commitment or agreement of a common carrier entered into by reason of any requirement or recommendation of any board or public officers acting under delegated authority from the general court prior to the enactment hereof.

Manifestly, it was the desire of the General Court that the Commission should be at liberty, in matters of rates and service, to take such action as might seem to it just and reasonable and in the general public interest. To use the words of the Supreme Court in the Arlington case, "the plain purpose of the Legislature, in recognition of the fact that many street railways operate miles of tracks extending through numerous cities and towns, was to prescribe for the regulation of fares throughout the Commonwealth by a single public board, which may be expected to act with a broad and unbiased view for the promotion of the common good of all the conflicting interests involved and not under the influence of purely local considerations. The statute is a legislative determination that it is unwise and inexpedient longer to permit the full development of interurban transportation by street railways to be hampered by conditions as to fares contained in locations granted by the public officers of different municipalities." For these reasons the rulings asked for by the remonstrants, which relate to the authority and jurisdiction of the Commission in the premises, are denied.

It remains to decide whether the company may justly and reasonably withdraw the special ticket concession which it now gives to the people of Fall River, substituting in place thereof not a six-cent fare, as was originally proposed, but a straight five-cent fare. This question must be viewed in the light of all the evidence which was introduced in the general rate case, for

all of this evidence was by common consent made a part of the record. In other words, the present proceedings are supplementary in their nature and involve an issue which would have been decided in the main case if the Commission had been able at that time to give adequate attention to the various special questions of law and of fact raised by the numerous ticket concessions throughout the system. The decision in the main case, indeed, contemplated such supplementary proceedings.

In the main case, the peculiar characteristics of the Bay State company were pointed out. It is not a simple, homogeneous property, but rather a collection of urban street railway systems scattered all over eastern Massachusetts and tied loosely together by so-called interurban lines which are slow-speed routes located largely along country highways. As stated in the last annual report of the Commission (page xix), "one of the most difficult questions for the Commission to decide was how far this great and complex system, operating in 91 cities and towns, including those in New Hampshire and Rhode Island, ought to be regarded as a single unit for rate-making purposes, and to what extent patrons in the richer territory ought to be called upon to make up deficiencies in the lean." Upon the evidence, it was reasonably clear that the financial troubles of the company were largely caused by the low earning capacity of its country lines and that many of the urban portions, if operated by companies with no outside property, would be able to earn a sufficient return, and in some cases a very good return, without an increase in the five-cent fare. On the other hand, all of these various properties have been consolidated into one, without public opposition and with the specific approval of public authorities, and are now owned by one company and must be financed, whatever the theory upon which rates are fixed, through this one corporate unit.

Obviously it was both impracticable and inexpedient to attempt to re-create the conditions which would have prevailed if the original separate companies had continued to exist, or to fix rates for every line or for every group of lines upon an exact cost basis. For the good of the entire system, which for certain very practical purposes, as above indicated, clearly is a unit, there must be some give and take, and the communities and localities in which the company earns the major part of its divisible income must expect, in some measure at least, to bear the burden of lines which cannot support themselves. Under the conditions, any adjustment of fares must, to a certain ex-

tent, be arbitrary, and in the end the Commission reached the conclusion that a reasonable adjustment might be made by distinguishing between the less thickly settled portion of the company's territory and the more populous centers which it serves, permitting a six-cent fare in the former but continuing the five-cent fare in the latter.

No claim was made by the Commission that this decision established equality of conditions, so far as earnings and return upon investment were concerned, upon the various lines or even in the various city districts. If such a rule had been followed, for example, the city of Lynn would clearly have been entitled to more favorable rates than any other city in the system. It was felt that it was distinctly desirable, upon grounds of general public policy, to preserve the five-cent fare in the more thickly settled urban districts, so far as it could reasonably be preserved; that these districts have a stronger equitable claim to such a fare than the other portions of the Bay State territory; and that the solution which was finally reached, under all the circumstances, was more nearly consistent with justice and equity to the company, and to the public which it serves, than any other practical solution which could, at the time, be devised.

Under the present circumstances, with the existing ticket concession, Fall River, in effect, has a unit fare of $4\frac{1}{8}$ cents, while no other city in the Bay State system has a fare lower than five cents. Indeed, so far as the Commission is aware, no other city in the commonwealth has so low a street railway fare in force at all hours of the day and applicable to every class of traffic. From an exhibit filed in the general rate case, it appears that the average fare per revenue passenger in the Fall River district during the year ended June 30, 1914, was 4.39 cents. In contrast with this the statistics in the last annual report of the Commission (page xeviii) show that the average fare per revenue passenger, during the year ended June 30, 1916, of the Union Street Railway Company, operating in the neighboring, and in many respects similar, city of New Bedford, was 4.80 cents.

Much time was spent by the company at the hearings in attempting to prove through the testimony of experts that the fares within what it styled the Fall River "traffic district," made up of the city lines and certain tributary lines in nearby towns, are insufficient to yield reasonable compensation for the service rendered. Considerable time was also taken by the remonstrants in attempting to prove by similar means that the fares within

the city limits, and, indeed, within the whole "traffic district" are sufficient to yield not only a fair but a generous return upon the investment. In the opinion of the Commission, however, it is unnecessary, for the purposes of the case, to analyze this testimony in detail or to attempt to reach any precise conclusion in regard to the financial results from operation either within the city limits or within the "traffic district." It is sufficient to say that we are satisfied that, if the lines in and about Fall River within the zone served by a single fare were owned by a separate and independent company, in all probability that company would not be seeking to increase the present rate of fare.

That, however, is not the situation by which the Commission is confronted. For better or for worse the lines which serve Fall River have been merged with others and are owned by a company which operates the complex system of street railway properties, spread all over eastern Massachusetts, which has already been described. This company is faced with a difficult problem. Without doubt, there is wide-spread complaint in regard to the character of the service which it is furnishing. New cars are badly needed, both for more efficient and for more economical operation. In many places track and overhead wires are in need of reconstruction and the power distribution system ought to be augmented. To make these improvements capital must be procured, and the company finds it very hard to raise the necessary funds. Since the decision in the general rate case, the wages of its employees have been very substantially increased and the prices of materials and supplies have continually been advancing.

If it be true that the lines in Fall River alone could be operated at a profit with the present ticket concession in effect, the evidence in the general case leads the Commission to believe that the same is probably true of other cities which the company serves, notably of Lynn, Lawrence and Brockton. Why, then, is it just and reasonable that Fall River alone should have this concession? If the granting of the location upon the Slade's Ferry bridge had imposed any particular burden upon the city there might, perhaps, be some basis for such a discrimination, but, so far as the Commission can ascertain, the existence of a street railway line upon this bridge, giving the city direct trolley connection with the territory upon the opposite shore, has, on the whole, been a benefit rather than a burden. It is true that, since 1898, the condition in the franchise grant which imposed upon the company the burden of keeping the highway portion

of the bridge in repair has not been operative, but the same is true of similar conditions relative to the repair of the city streets, and the city is receiving its share of the so-called "excise tax" as compensation therefor.

Undoubtedly it is of advantage to the entire community that its country districts should be reasonably well supplied with transportation facilities and that a company like the Bay State which provides such facilities should be in a position adequately to maintain and operate them. As the Commission said in the Middlesex and Boston case (2d Ann. Rep. P. S. C., p. 117): "The Commonwealth, which expends the taxpayers' money in the construction of good roads all over Cape Cod and through the Berkshires, would not be content with a policy which promoted the abandonment and destruction of existing street railway facilities in eastern Massachusetts." If the ticket concession should be withdrawn in Fall River, there is, under present conditions, not the slightest danger that the Bay State company would be able to earn an exorbitant return upon the capital honestly and prudently invested in its entire system. The situation is not one to be viewed in any narrow way, and attention cannot, with regard for the general interest, be concentrated upon a particular portion of the Bay State system without consideration of the status and welfare of the system as a whole. To do so would, in the long run, be to the detriment of even that particular portion, for the interests of all, in the last analysis, are bound up together.

The Commission is aware (see its decision in the main case) that the consolidations which produced the present Bay State Street Railway Company were, in general, effected under statutes which provided that facilities for travel on the railways of the consolidating companies should not "be thereby diminished or the rates of fare increased." The legal effect of this provision, as applied to future conditions, was never very clear and it certainly is not now binding upon the Commission in view of the terms of the Act of 1913 (chapter 784), but its equitable force we appreciated, and had fully in mind, in the decision which was rendered in the main case. While, in that case, the Commission recognized that every effort should be made, for this and other reasons, to preserve the existing five-cent fare in the larger urban centers of Massachusetts, and while it believed it just and reasonable that to this extent a distinction should be made between portions of the territory served by the Bay State com-

pany, it is not of the opinion that under present conditions it is either wise or expedient or, indeed, just, to oblige the company to maintain a further distinction which would allow one city which it serves the advantage of a fare lower than five cents which is not extended to any of the rest. Nor do we believe that the comparatively small additional burden which will be imposed upon the people of Fall River if this concession is withdrawn is one which it is unfair, under the circumstances, to ask them to bear or which will prove to their ultimate disadvantage. It will place them in a position no better and no worse than that of the people of practically all the other large cities of the commonwealth, and, so far as it adds to the financial strength of the company, it will, to that extent, bring nearer the day of improved service and facilities.

For the above reasons, the further rulings requested by the remonstrants are denied; the Commission finds that the withdrawal of the existing ticket concession is, under the circumstance, necessary to secure reasonable compensation for the service rendered, and the schedule filed by the company is allowed to become effective at the end of the period of suspension.

By the Commission,

ANDREW A. HIGHLANDS,

MARCH 5, 1917.

[P. S. C. 1085]

Secretary.

Petition of Mayor and City Solicitor of Beverly that workingmen's tickets at a reduced rate of fare be issued on a certain line operated by the Bay State Street Railway Company in that city.

In the so-called "Bay State Rate Case," decided on August 31, 1916, the Commission found that the evidence did not "justify it in permitting the regular unit of cash fare to be increased in the populous centers which are already carrying their fair share of the burden." It therefore disallowed the proposed six-cent fare "in the present five-cent zones within, or from the centers of," certain cities, one of which was Salem. The result of this decision has been that in certain communities adjoining such cities the fare on routes entering the city is five cents, while the fares on other routes, operating in part over the same tracks but not entering the city, is six cents.

This is true in the present instance. It is now possible to ride from Beverly Cove to the center of Salem for five cents, but in going from Beverly Cove to the works of the United Shoe Machinery Company at Mackay and Elliot streets, a shorter distance, it is necessary to pay six cents. This is effected by charging one cent for the necessary transfer at Cabot and Pond streets. The petitioners now ask that the fare for this latter ride be made five cents, instead of six cents, by the sale of workmen's tickets, good between the hours of 6 A.M. and 7.30 A.M., 11.45 A.M. and 1.45 P.M. and between 5 P.M. and 6 P.M. This change is sought for the accommodation of workmen at the Shoe Machinery plant.

In the "Bay State Rate Case," above mentioned, the company sought to abolish all reduced rate tickets in effect throughout its entire system. This question was left in abeyance by the Commission, since the time at its command was not then sufficient for the consideration of all the special circumstances surrounding the issuance of these tickets. The company, however, is now preparing a revised schedule dealing with this matter, and the question will probably be before the Commission for consideration at an early date. The Commission also stated in its decision in the general case that "if, after an experience of not less than one year under the new rate schedule, the situation might appear either to the company or to the public to warrant a further revision of rates, the Commission is prepared, upon application, to deal with the situation anew in the light of conditions then prevailing." The condition in Beverly which is the subject matter of the pending petition is not peculiar, for similar conditions have been a source of complaint in other parts of the system. The question is one which, in the opinion of the Commission, ought not to be dealt with in a special instance, but should be considered in its general application to the entire system. The petition is, therefore, dismissed, with the understanding that it may be renewed again without prejudice, either at the time when the general subject of reduced rate tickets is raised or in connection with any future application for a general revision of fares.

For the Commission,

ANDREW A. HIGHLANDS,

APRIL 10, 1917. [P. S. C. 1085]

Secretary.

Notice of the Bay State Street Railway Company of proposed changes in fares, transfers and reduced rate tickets upon its railway.

SAMUEL H. PILLSBURY } for Bay State Street Railway Com-
SHELDON E. WARDWELL } pany.

THOMAS S. SULLIVAN for City of Beverly.

G. V. RICHARDS for Town of Billerica.

ROBERT B. MARTIN for Hyde Park District of Boston.

CHARLES F. MANN for Town of Bridgewater.

E. GERRY BROWN for Brockton Central Labor Union and
Brockton Chamber of Commerce.

W. D. NORTHRUP } for Town of Chelmsford.
J. L. MOORE }

LOUIS R. KIERNAN } for City of Chelsea.
JOHN E. BECK }

HAROLD F. HATHAWAY for Town of Dighton.

FRANK E. RAYMOND for Town of Essex.

RALPH S. BAUER for Essex County Associated Boards of Trade.

GEORGE GRIME for City of Fall River.

H. F. MCCREADY for Fall River Chamber of Commerce.

WILLIAM F. BRAY for Town of Georgetown.

JOHN A. STODDART } for City of Gloucester.
M. FRANCIS BUCKLEY }
JAMES M. LYLE }

C. F. SPOKEN for Gloucester Central Labor Union.

ESSEX S. ABBOTT for City of Haverhill.

DANIEL M. CASEY for Haverhill Chamber of Commerce.

GEORGE S. MARSH for Town of Hingham.

LOUIS E. FLYE } for Town of Holbrook.
GEORGE W. PORTER }

GEORGE FOX TUCKER for Town of Lakeville.

DANIEL J. MURPHY for City of Lawrence.

GEORGE E. RIX for Lawrence Chamber of Commerce.

ROBERT F. MARDEN for Lowell Board of Trade.

ARTHUR G. WADLEIGH for City of Lynn.

RALPH S. BAUER for Lynn Chamber of Commerce.

RAYMOND H. TREFRY for Town of Marblehead.

JOHN D. SULLIVAN for Town of Middleborough.

M. E. TYLER for Town of Middleton.

FRANKLIN PORTER for Middleton School Department.

LINCOLN BRYANT for Town of Milton.

WALTER B. HOPKINSON }
 HORACE I. BARTLETT } for City of Newburyport.
 JAMES A. HALLORAN for Town of Norwood.
 HORACE P. FARNHAM for City of Peabody.
 EVERETT C. BUMPUS for City of Quincy.
 THOMAS J. KENNEY for Canton Street Associates of Randolph.
 M. M. HURLEY for Town of Raynham.
 WALLACE F. PRESTON for Town of Rehoboth.
 B. J. FITZGERALD for Town of Rockland.
 D. M. O'BRIEN for Rockland Board of Trade.
 J. M. MARSHALL for Town of Rockport.
 WILLIAM D. CHAPPLE }
 FREDERICK W. BROADHEAD } for City of Salem.
 FRANKLIN S. SIMONDS for Town of Somerset.
 H. H. RICHARDSON }
 L. V. COLLINGHAM } for Town of Stoneham.
 CORNELIUS HEALEY, Jr., for Town of Stoughton.
 JAMES W. SANTRY for Town of Swampscott.
 JOHN B. TRACY for City of Taunton.
 M. E. S. CLEMONS for Town of Wakefield.
 DANIEL COONEY }
 JOHN F. BOWEN } for Town of West Newbury.
 EDWIN C. JENNEY for Town of Westwood.
 HENRY E. HANLEY for Town of Weymouth.
 WILFORD D. GRAY for City of Woburn.
 WHITFIELD L. TUCK for certain Granges.
 EDWIN F. DWELLEY for certain stockholders in Massachusetts
 Electric Companies.

REPORT.

In the report and order of the Commission dated August 31, 1916, upon the case then pending relative to the fares of the Bay State Street Railway Company and hereinafter referred to as the Bay State Rate Case, the Commission authorized the company to file a new schedule of passenger rates upon the basis set forth in said report and order, and stated that, after an experience of not less than one year under the new rate schedule, the Commission was prepared, upon application, to deal with the situation anew in the light of conditions then prevailing. A new rate schedule numbered M. P. S. C. 26, effective October 9, 1916, and supplements thereto, effective October 16, 1916, were accordingly filed with and approved by the Commission and have remained in force since the effective dates thereof.

On May 16, 1917, the company filed with the Commission a petition alleging that, since the report and order in the Bay State rate case, conditions had so changed as to require the company to increase its passenger fares without waiting for the expiration of the period of one year indicated in the report in said case, and requesting the Commission to reopen the case so as to afford an opportunity to present evidence justifying such an increase. Upon this petition a public hearing was held on May 25, 1917. The company introduced evidence showing changes in conditions since the decision in the Bay State rate case, the need of additional net income and the necessity of an increase in its passenger fares, but presented no specific plans for a revision of existing rates. During the course of the hearing it was agreed that, if the Commission should decide to reopen the case, conferences between the company and representatives of the communities affected should be held, prior to the filing of any new schedule, with a view to determining how far it might be possible through friendly adjustment to co-operate in working out results. On May 26, 1917, the Commission, in a memorandum then issued announced that it was of the opinion that the evidence presented warranted the reopening of the case, and that it would set the matter down for further hearing upon the filing of a new schedule by the company.

On June 12, 1917, the company filed a schedule numbered M. P. S. C. 46, effective July 13, 1917, showing proposed changes in its passenger fares. Under this schedule it was proposed to make the unit of cash fare 6 cents upon all lines, to sell nine tickets for 50 cents, good at all times, except on Saturday afternoons, Sundays and holidays, in the present five-cent zones within, from or to the centers of Boston (including Hyde Park), Beverly, Brockton, Chelsea, Everett, Fall River, Haverhill, Lawrence, Lowell, Lynn, Malden, Melrose, Peabody, Quincy, Revere, Salem and Taunton, to charge one cent for each transfer issued, to abolish certain commutation, excursion and special tickets, including the 8-cent check, so-called, issued jointly with the Boston Elevated Railway Company, and to increase the rates for workmen's tickets to 80 per cent of the cash fare where they cover two zones and to $66\frac{2}{3}$ per cent of the cash fare where they cover three zones.

At the public hearing upon this schedule, held June 21, 1917, the company introduced evidence purporting to show that it is entitled to additional revenue to the amount of \$1,404,906. It also presented certain computations which indicated that the

changes in rates provided for in its new schedule would yield an annual increase of \$1,111,700.

It appeared that, in accordance with the stipulation made at the former hearing on May 25, conferences prior to the filing of this schedule had been held between the company and representatives of the communities affected, but no agreement had been reached. Upon representation that further conferences might result in a basis of agreement, the hearing was suspended and negotiations between the parties were resumed. As the result of these further conferences and subsequent hearings before the Commission on June 22, 26 and 27, 1917, certain modifications in the schedule filed were agreed to by the company, embodied in a memorandum dated June 28, 1917, and submitted to the Commission on June 30, 1917.

The schedule as amended by this memorandum provides in effect for the issue of 20 tickets for \$1.00, instead of 9 tickets for 50 cents as proposed in the original schedule, such tickets to be good at all times, except on Saturdays after 1 P.M., Sundays and holidays, within the seventeen cities designated in the schedule, between such of those cities as are adjoining, and between such cities and adjoining towns or portions of towns which by reason of location or density of population are practically part of such cities. The proposed charge of one cent for each transfer was eliminated, but provision was made for the adjustment of transfer privileges outside the territory above described, by the change of transfer limits upon certain lines where the length of ride appeared to be greater than could reasonably be furnished for a single fare. The proposed increases in workingmen's tickets and the cancellation of commutation and other special tickets were also eliminated, upon the understanding that the company might at a later time file a separate schedule of proposed changes in the rates for such tickets. It was also understood that any patrons of the company within its present five-cent territory who would be precluded from the use of the proposed 20-ride tickets should have the right without prejudice, upon a petition at any time hereafter brought, to secure the determination of the Commission as to whether such tickets ought reasonably, having in mind the general principles of the plan adopted, to be made available for their use, and that a similar opportunity should be open with respect to transfer privileges curtailed. Except as thus indicated, it was proposed that the revised basis of fares should remain in effect for an experimental period of six months, during which time the company should keep a detailed record

of results within the various communities and after which, upon application to the Commission, the entire case should be reopened for such further investigation and possible revision of fares as might then seem proper.

As a result of the modifications, above described, in the original schedule of June 12, 1917, the company has estimated that the annual increase in operating revenue would be reduced from \$1,111,700 to about \$720,000. In the judgment of the Commission there is little reason to believe, unless conditions change, that this estimate is unduly low.

As already stated, the modifications of the company's original schedule were made after conference with representatives of the cities and towns affected by the proposed rate increases and represent a practical agreement between parties. The company's claim that it needs additional revenue was not contested, and with few exceptions the counsel or other official representatives of the communities affected agreed to the general scheme of revision of fares as finally presented by the company, except in one particular. It was urged that the sale of 20 tickets for \$1.00 required too large an initial investment, and that 5 tickets should be sold for 25 cents, or at most, 10 tickets for 50 cents. With this one exception, which will be considered later, the basis of fares proposed represents a substantial accord between the parties directly concerned, and the practical question before the Commission is whether it may properly take the necessary official action to make this agreement effective.

The Bay State rate case was heard and decided largely upon the basis of conditions existing and the results of operation during the year ended June 30, 1914. On that basis the Commission found that the company needed additional revenue of nearly \$600,000 to enable it to provide for the proper maintenance of its properties, to make adequate provision for depreciation and to pay a reasonable return upon its legitimate investment. Upon the basis of the results of operation for the year ended June 30, 1917, eleven months representing actual and one month estimated, receipts and expenditures, and making an allowance for depreciation and for the return upon the investment which was approved in the Bay State rate case, the figures presented by the company indicated that its net income during the past year was insufficient by the amount of \$1,404,906, in spite of the increases in fare which became effective last October and certain economies which have since been instituted.

The company claimed that this result has been due, in the

main, to increases in the price of coal and increases in the prices of materials, representing a weighted percentage of about 66 per cent since 1914, and to increases in the rates of wages paid, as fixed by the arbitration award of June 21, 1915, and the subsequent agreement between the company and its employees, effective October 1, 1916, and aggregating \$768,000 annually, as compared with 1914. It is unnecessary, however, for the Commission to make any detailed analysis of the figures presented, or to determine whether the company is justly entitled to the entire amount of additional revenue claimed by its exhibits, as no suggestion has been made from any quarter that the modified schedule now under consideration will yield this amount and as we are satisfied that the results from its operation, during the experimental period at least, will not make possible an excessive return upon the legitimate investment.

In regard to the main point in issue between the company and the representatives of the cities and towns, — namely, whether 20 tickets should be sold for \$1.00 or 10 tickets for 50 cents, the Commission is of the present opinion that it is not unreasonable to require an investment of \$1.00 for what are virtually commutation tickets, in view of the fact that the large majority of present schedules for workingmen's and other forms of special tickets now issued by the Bay State company provide for an investment of \$1.00 or more, that an investment of a like or larger amount is commonly required for similar tickets issued by other street railway companies in the commonwealth, as well as by the railroad companies, and that the issue of such tickets in smaller amounts would facilitate their use by casual riders, as well as by the regular riders for whom they are intended, and thus lead to an unwarranted decrease in the revenue derived. The question is one, however, which can be considered to advantage at the end of the experimental period, when evidence based upon actual experience with the tickets will be available, and it should be understood that it will be open for renewed consideration at that time.

Representatives of certain communities, while practically admitting the company's need of additional revenue, urged that their communities, by reason of certain special conditions, should be exempted from any increase in fares under the general plan proposed. Without much question, other communities, which have acquiesced in the plan, might have urged considerations equally pertinent to show that they also should be exempted. Such objections, we feel, are based upon a failure to appreciate

the spirit and significance of the agreement which has been reached. Under this agreement the company will not secure all that it claims it ought to have, and this is equally true of certain of the communities. The company has been willing to make concessions, because it realizes that a prolonged controversy with the public which it serves, whatever the final outcome, would be injurious to its interests and that it can probably gain better net results from a smaller increase in rates, plus the good will of its patrons, than from a larger increase without such co-operation. On the other hand, the communities realize that the present financial condition of the company, wherever the responsibility may lie, is injurious to the physical condition of its property and is standing in the way of improvements which should lead, not only to better service, but to actual economies in operation.

In taking this attitude and in reaching this agreement, it is the opinion of the Commission that the company and the communities have both been wise, and that better results are likely to be achieved for all concerned than could have been obtained if another course had been followed. After careful consideration of all the circumstances, therefore, the Commission has reached the conclusion that the rates now proposed are not unjust or unreasonable as a basis for trial, and is prepared to allow the company to file a new schedule of rates and charges in accordance with its memorandum already submitted and embodying the results of the agreement reached, and to permit the same to become effective without suspension on or after July 13, 1917, the effective date of the original schedule. This action is taken with the distinct understanding, however, that this schedule is to be regarded as experimental and that actual results are to be tested and investigated without prejudice at the end of a six months' period. It is also the understanding of the Commission that the company will continue with all possible expedition the work which it already has inaugurated, looking toward greater economy in, and a general improvement of, its methods of operation and of management.

ORDER.

Notice of the Bay State Street Railway Company of proposed changes in fares, transfers and reduced rate tickets upon its railway.

It appearing that the Bay State Street Railway Company has filed with this Commission a schedule numbered M. P. S. C. 46,

showing changes proposed to be made in fares, transfers and reduced rate workmen's, commutation and excursion tickets in Massachusetts, effective July 13, 1917; and

It further appearing that a full investigation of the matters and things involved has been had, and that the Commission on the date hereof has made and filed a report containing its findings of fact and conclusions thereon, which said report is hereby referred to and made a part hereof; it is

Ordered, That the Bay State Street Railway Company be hereby notified and required to cancel the rates and charges stated in the schedule now on file and numbered M. P. S. C. 46.

It is

Further ordered, That the Bay State Street Railway Company be hereby notified that it may readjust the rates and charges upon its lines in Massachusetts within thirty days of the date hereof, but not before July 13, 1917, upon not less than three days' notice to the Commission and the general public, by filing at this office and posting in a conspicuous manner in its waiting rooms and cars, in the manner prescribed in section 20 of chapter 784 of the Acts of 1913, a printed schedule readjusting its rates and fare limits and transfer privileges substantially in accordance with its memorandum, dated June 28, 1917, and submitted to this Commission June 30, 1917, showing proposed changes in fares, fare limits and transfer privileges.

And it is

Further ordered, That a copy of this order be filed at the office of the Commission, and a copy hereof be forthwith served upon the Bay State Street Railway Company.

By the Commission,

ALLAN BROOKS,

Assistant Secretary.

JULY 3, 1917. [P. S. C. 1807]

THE BOSTON AND WORCESTER RATE CASE.

*Notice of the Boston and Worcester Street Railway Company of
proposed change in rates of fare upon its railway.*

P. S. C. 1805.

DECIDED SEPTEMBER 22, 1917.

GUY W. COX C. D. EMMONS ARTHUR E. STONE	}	for the Boston and Worcester Street Rail- way Company.
---	---	---

F. H. HILTON for the Town of Framingham.

GEORGE E. OSGOOD for the Town of Hudson.

R. H. BEAUDREAU for the City of Marlborough.

WILLIAM J. NAPHEN for the Town of Natick.

RAYMOND B. FLETCHER for the Town of Shrewsbury.

R. H. OVESON for the Town of Southborough.

CLARENCE A. BUNKER for the Town of Wellesley.

J. B. KEATING for the Town of Westborough.

FRANK L. GAGE for the Board of Trade of Marlborough.

WILLIAM BURNS for the Wellesley Park and Oaks Improve-
ment Association.

RALPH C. MULLIGAN for Property Owners in Wellesley and
Natick.

REPORT.

On June 25, 1917, the Boston and Worcester Street Railway Company notified the Commission of a proposed change in passenger fares to take effect July 25, 1917. Pending investigation, the operation of this new schedule was suspended by the Commission until October 1, 1917, and public hearings were held on July 16 and 25 and August 1.

The company now has the usual system of irregular, overlapping zones, in each of which the cash fare is 6 cents. Including transfer privileges, these zones vary from 9.85 miles to 3.16 miles in length and average about 5.1 miles. Fifty-ride tickets are sold for \$2.75, or at the rate of $5\frac{1}{2}$ cents per ride, and between various important points round-trip tickets are sold at a

substantial reduction from the regular rate of fare. In the city of Marlborough workingmen's tickets are sold in packages of 30 for \$1.00, each coupon good for a single ride within the city limits, from 5.30 to 7 A.M., from 11.30 A.M. to 1 P.M. and from 5.30 to 6.30 P.M. The average fare per revenue passenger on all lines in 1916 was 5.51 cents.

For this method of charging, the company proposes to substitute a system based on a uniform charge of 2 cents per mile, similar to the so-called "copper zone system" which has been adopted by various interurban lines in other parts of the country and now is on trial for an experimental period of six months by the Concord, Maynard and Hudson Street Railway Company in this commonwealth. Under this system, the road would be divided into sections approximately 1 mile long, the minimum fare would remain 6 cents, for a ride covering three sections or less, and for each additional section beyond that 2 cents would be charged. The system was fully described in the report of the Commission in the Concord, Maynard and Hudson case, decided May 25, 1917, and also the special method of collecting fares which it renders necessary. In the present instance, it is proposed to modify this system by selling 100-mile books for \$1.70, 15 per cent discount from the regular rate, with a minimum charge of 3 mileage coupons for any single ride; to sell round-trip tickets at a similar discount of 15 per cent, good between the principal points and the Chestnut Hill terminal; and to continue the sale of workingmen's tickets at the rate of 30 for \$1.00 in the city of Marlborough, each coupon good for a ride covering not more than 3 fare sections within the city limits during the specified hours.

The company has spoken of this new system of charging as in the nature of an "equalization of rates," and it is true that it would make the charge for certain rides lower than the fare now paid. On the whole, however, the revision would be upwards, and undoubtedly it is the hope of the company to secure in this way a substantial increase in income. According to its estimates, the change would be equivalent to an increase in the average fare per revenue passenger from the present 5.51 cents to 6.43 cents, or 16.7 per cent (Record, p. 365). On the other hand, it is estimated that the increase would in some cases cause a falling off in traffic, so that the net increase in total annual passenger revenue based on the figures for the calendar year, 1916, would be but \$74,000 (Exhibit 7), or slightly more than 10 per cent.

The Boston and Worcester Street Railway Company was or-

ganized on November 15, 1901, and began operation of its main line in May, 1903. It owns and operates between Boston and Worcester a double track, interurban line of relatively high speed, with short branches to Natick Center, Saxonville, Framingham, and Hudson by way of Marlborough. It enters Worcester over the tracks of the Worcester Consolidated Street Railway Company, and Brookline and Boston over the tracks of the Boston Elevated Railway Company. In all, it operates 83.13 miles of track, of which 31.22 miles are second main track. About 25 miles are located on private right of way, and much of the track which is not on private right of way is located in special reservations in the public streets. The average speed of operation in the year ended June 30, 1916, was 16.8 miles per hour, the highest in the state, contrasted with a general average of 9.9 miles. The only service of a distinctively urban character, as distinguished from interurban, is furnished by the so-called "cross town line" in the city of Marlborough. The following table shows the population in the territory served at successive periods, with the percentage of increase from 1905 to 1915:—

	1905.	1910.	1915.	Per Cent.
Framingham,	11,548	12,948	15,860	37.34
Hudson,	6,217	6,743	6,758	8.70
Marlborough,	14,073	14,579	15,250	8.36
Natick,	9,609	9,866	11,119	15.71
Newton,	36,827	39,806	43,113	17.07
Northborough,	1,947	1,713	1,797	7.70*
Shrewsbury,	1,866	1,946	2,794	49.73
Southborough,	1,931	1,745	1,898	1.71*
Wellesley,	6,189	5,413	6,439	4.04
Westborough,	5,378	5,446	5,925	10.17
Total,	95,585	100,205	110,953	16.08
Brookline,	23,436	27,792	33,490	42.90
Worcester,	128,135	145,986	162,697	26.97
Boston,	595,380	670,585	745,439	25.20
Grand total,	842,536	944,568	1,052,579	24.93

* Decrease.

The branch line to Framingham and Saxonville was originally owned by the Framingham Union Street Railway Company and the branch line to Marlborough and Hudson by the Framingham, Southborough and Marlborough Street Railway Company

and by the Marlborough Street Railway Company. The latter company went into receiver's hands in 1902 and its property was taken over with the approval of the board of railroad commissioners by a new company, called the Marlborough and Framingham Street Railway Company, for \$105,000, less than half the outstanding stock and debt of the old company. The Marlborough and Framingham was consolidated with the Framingham, Southborough and Marlborough in December, 1903, and shortly afterwards both the Framingham, Southborough and Marlborough and the Framingham Union were consolidated with the Boston and Worcester, the exchange of stock in all three cases being on a share for share basis approved by the board of railroad commissioners.

The company has, it seems, frequently increased its charges in the past. This is illustrated by the one-way through fare between Chestnut Hill, the eastern terminus near the Newton-Brookline line, and Lincoln Park, the western terminus near the Shrewsbury-Worcester line. Originally this fare was 30 cents. In 1904 it became 35 cents; in 1905 it was increased to 40 cents; in 1907 it was raised again to 45 cents; and in 1909 it was made the present 50 cents. Now 62 cents is proposed, or more than twice the original fare. In general, these increases were effected by introducing additional zones, and coincident with such changes the various reduced rate tickets were introduced. The unit of cash fare remained 5 cents until January 1, 1909, when the present 6-cent unit was adopted, a change which was approved by the board of railroad commissioners on May 18, 1909. The last increase was made on June 28, 1913, when the prices of certain of the round-trip tickets were slightly raised.

The condensed balance sheet of the company on April 1, 1917, was as follows: —

<i>Assets.</i>	
Cost of railway,	\$3,443,677 37
Cost of equipment,	793,310 74
Cost of land and buildings,	959,170 52
<hr/>	
Total permanent investments,	\$5,196,158 63
Current assets:	
Cash,	\$13,280 74
Miscellaneous accounts receivable,	19,983 79
Material and supplies,	143,475 52
Fuel supplies,	28,388 35
<hr/>	
	205,128 40

Unadjusted debits:

Prepaid insurance,	\$14,710 34	
Prepaid interest,	485 84	
Discount on funded debt,	36,300 00	
	<hr/>	\$51,496 18

\$5,452,783 21
Liabilities.

Common stock,	\$2,025,000 00
Preferred stock,	457,200 00
Stock premiums,	39,720 00
Funded debt,	2,520,000 00

\$5,041,920 00

Current liabilities:

Loans and notes payable,	\$150,000 00	
Audited vouchers,	61,223 39	
Accrued interest,	24,300 00	
	<hr/>	235,523 39

Miscellaneous credits:

Reserve for taxes,	\$22,712 71	
Reserve for damages,	17,453 50	
Reserve for depreciation,	33,000 00	
Reserve for unredeemed tickets,	5,613 89	
Reserve for preferred dividends,	2,286 00	
	<hr/>	81,066 10

Surplus,	94,273 72
--------------------	-----------

\$5,452,783 21

All of the stock and bonds have been issued under the supervision of this Commission or its predecessor, the board of railroad commissioners; and this was also true of the merged companies, excepting stock of the par value of \$30,000 issued by the Framingham Union company. The integrity of this issue, however, was established by subsequent appraisals. The capitalization per mile of main track, about \$61,000, is high; but this, it seems, is due to the relatively heavy expense incurred in the construction of the roadway, — for private right of way and for the widening and alteration of public streets and for other work of similar character. Since the date of the balance sheet above given, the Commission has approved the issue of \$40,000 additional $4\frac{1}{2}$ per cent mortgage bonds and \$270,000 additional preferred stock; but these securities have not yet been issued. When issued, the proceeds are to be used in part to pay a com-

paratively small amount of indebtedness which has already been incurred for additions and improvements, but in the main to meet the cost of new equipment and other similar property which is to be acquired. Of the floating indebtedness shown by the above balance sheet, it appears that a substantial portion represents expenditures made at the time of the original construction of the road for which the board of railroad commissioners were unwilling, after appraisals, to authorize the issue of permanent securities. In part it also represents discounts on the mortgage bonds which have been issued.

The following table shows, for the years from 1904 to 1917, inclusive, the receipts from transportation of passengers, the receipts from the trolley freight and express business, the total operating revenue, the total operating expense and the net divisible income. The figures are for the year ended September 30 until 1910, and thereafter for the year ended June 30.

YEAR.	Passenger Revenue.	Express and Freight Revenue.	Total Operating Revenue.	Operating Expense.	Net Divisible Income.
1904,	\$385,060 52	\$200 00	\$390,998 09	\$210,962 25	\$91,919 85
1905,	443,098 44	200 00	453,904 86	235,194 84	105,061 96
1906,	501,719 22	200 00	514,464 70	269,391 29	112,397 64
1907,	517,370 23	200 00	531,560 04	273,364 48	106,534 04
1908,	539,849 37	200 00	553,613 48	282,917 16	114,731 14
1909,	551,705 50	200 00	577,511 06	321,093 53	77,463 86
1910 (9 months),	364,505 12	200 00	369,243 65	244,556 96	3,959 45 <i>d</i>
1911,	603,546 76	-	613,971 55	355,855 00	94,466 82
1912,	603,584 22	-	617,152 44	361,438 32	86,713 32
1913,	628,042 51	24,937 94	663,366 50	417,847 22	78,878 20
1914,	635,305 26	71,171 20	716,304 99	465,076 78	84,496 64
1915,	656,608 75	61,177 32	737,330 16	443,126 03	125,645 78
1916,	687,031 72	90,332 53	799,855 53	500,333 03	129,974 79
1917,	669,338 32	116,674 09	805,545 45	553,905 64	81,721 73

d Deficit.

From this table it will be seen that there has, on the whole, been a steady increase in passenger business, although receipts fell off somewhat during the past year. Revenue from this source in 1917 was 74 per cent greater than in 1904. During the same period, the total operating revenues increased 106 per cent, the larger percentage being due principally to the rapid increase in

the trolley freight and express business in the past five years. The increase in operating expense, however, has been even more rapid, expenses in 1917 being 162 per cent greater than in 1904. The extent of this increase is further illustrated by the fact that the operating expense per car mile in 1904 was but 12.01 cents, whereas in 1917 it had risen to 25.11 cents. Two factors are chiefly responsible for this rise, namely, the growth of maintenance expense caused by the advancing age of the property, and the increase, especially rapid in the past two years, of the prices of materials, supplies and labor.

The company has never paid dividends in excess of .6 per cent and as a rule the per cent has been less. From 1904 to 1917, inclusive, the average upon common stock was but 3.45 per cent. The detail is shown in the following table: —

	Dividends (Per Cent).
1904,	3.00
1905,	6.00
1906,	6.00
1907,	6.00
1908,	6.00
1909,	3.00
1910 (9 months),	1.50
1911,	—
1912,	2.50
1913,	2.50
1914,	2.75
1915,	2.75
1916,	3.75
1917,	2.50

The dividend rate on the preferred stock is 6 per cent, but none was issued until 1912. As shown by the balance sheet already given, the company has accumulated from its operations a surplus of about \$90,000. It appears, however, that only \$33,000 has been set aside for depreciation, or less than 5 per cent upon the book value of rolling stock alone, and that, if the stated surplus should be included with this amount, the total provision for depreciation would still be inadequate.

The need of the company for additional net income is manifest. It remains to consider whether this need can be met in any other way than by an increase in rates, and if not, whether the increase proposed is greater than is reasonably necessary, or is in any other respect inequitable. The only method of increasing net income, other than raising rates, is to reduce expense or in-

crease traffic by better methods of operation or management. The Commission has been unable to find evidence that this company has not, on the whole, been well managed. There have, in the past, been very few complaints in regard to its equipment or service; its property has been maintained in reasonably good condition; it has operated express as well as local passenger service; and it has been more successful than any other company in the commonwealth in developing a trolley freight business. No other company secures so large a percentage of operating revenue from this source. Power cost has been reasonably low, considering the size of the property, and salaries are not high. The second vice-president and general manager, who has recently been brought from the Middle West to take charge of operation, receives \$9,000 per year; but no other officer receives a salary in excess of \$3,500, and the president, first vice-president, and secretary receive no salary at all.

It was urged by some of the remonstrants that the company, by curtailing service and overcrowding its cars and by failing to operate through cars to and from some of the branch line territory, has lost traffic which it might otherwise have obtained. It was especially urged that the company has not put into operation this year its "summer schedule," and this claim seems to be sustained, in part at least, by the facts. On Saturdays, Sundays and holidays extra cars have been operated as usual and the service has not differed from the service furnished in the summer of 1916; but on other days of the week, between the hours of 10 A.M. and 4 P.M., but 30-minute local service has been maintained between Framingham Junction and Chestnut Hill, instead of the 15-minute service which was furnished last year by operating the Hudson branch line cars, which now terminate at White's Corner, through to Boston. It is also true that less through cars are operated on the Natick branch line than was once the case, and that passengers traveling on this branch are now, as a rule, obliged to change at the Junction. The company, however, claims that these changes have been made after careful traffic counts and to eliminate unnecessary and uneconomical trips; that the overcrowding of cars has occurred, not in connection with this reduced service, but on Saturdays, Sundays and holidays; and that it has been due very largely to the unusual conditions caused by the Framingham military camp. On an interurban line sufficient service ought to be provided so that passengers can normally obtain seats, and it may well be that this company

has at times, and especially in recent months, fallen below a proper standard in this respect; but whether or not it could, by providing more nearly adequate service, increase its net income, which is the question at present in issue, is quite a different matter. Any loss of traffic on this account is offset, in part at least, by decrease of operating expense, and the net result which might have been obtained if another policy had been followed is purely a matter of speculation. Obviously the management has been guided by a desire to increase, rather than decrease, net income, and there is no evidence which would justify the Commission in holding that its judgment has been wrong in this respect.

In the Bay State rate case (4th Rep. P. S. C. pp. 61-65) the Commission reached the conclusion, after careful consideration, that the company was justly entitled to earn 6 per cent upon the full amount of capital honestly and prudently invested in its property. It was stated that this rate was to be regarded "as an average figure for the entire system," that there were lines where the risk was such that a higher return would be reasonable, if it could be earned, and that there were sections where the rate might well be less. The conclusion, moreover, was reached in full recognition of the fact that 6 per cent upon the entire investment would mean, in a case where a substantial portion of the investment was represented by funded debt bearing lower rates of interest, a return in excess of 6 per cent upon the stock. In the present instance, taking into account the character and risk of the enterprise and the meager returns hitherto received, we think the fair return should not be computed upon any lower basis. As above stated, the company's best estimate of the probable gain in gross receipts from the proposed change in rates is about \$74,000 (see Exhibit 7), taking into consideration probable losses of traffic. For purposes of argument, however, it has taken \$90,000 as the amount. It has also stated (Record, p. 140) that it expects \$16,000 gain from a recent increase in freight rates, which was made after the Interstate Commerce Commission had permitted a similar increase in the steam railroad rates. In the year ended June 30, 1917, the income available for interest and dividends, after deducting operating expenses and taxes, was \$201,480. Adding to this, \$90,000 for an increase in passenger fares and \$16,000 for an increase in freight rates, the amount would become \$307,480. The total investment made under public supervision and represented by bonds, stock and premiums on stock, leaving floating indebtedness entirely out of considera-

tion, is \$5,041,920 and 6 per cent upon this is \$302,515, or only slightly less than the figure just given.

In considering the probable earnings under the proposed new schedule, certain other factors must be borne in mind, as follows: —

(1) The company is in direct competition, so far as its main line is concerned, with the lines of the Boston and Albany Railroad Company between Boston and Worcester. While the single ticket rates between common points and Boston, over the Boston and Albany rails, are higher than the rates proposed for the Boston and Worcester, the rates available by the use of monthly season tickets are lower. In view of this circumstance, it is not likely that the company's estimate of gain from the new schedule is too low and it is quite possible that it is too high.

(2) In the computation above made, no allowance has been included for any further provision for depreciation. While the company has made no claim with respect to this matter, it is under obligation both to its stockholders and to the public to care for depreciation, and the amount now set aside for this purpose, \$12,000 per year, is obviously inadequate, being less than 2 per cent on the book value of the equipment alone.

(3) Prevailing wages are now under arbitration between the company and its employees, and, in view of the present cost of living, it is reasonable to assume that increases will be granted. Any increase allowed will date back to November, 1916.

(4) From the evidence, it appears that the company has not, until recent months, felt the full effect of the prevailing high prices of fuel and of materials and supplies in general. This is illustrated by the case of coal. For the year ended December 31, 1916, the average price paid per gross ton was \$4.66. For the year ended June 30, 1917, it was \$5.36 and the prices now being paid are even higher. Materials and supplies up to the first of this year were largely taken from a stock accumulated when prices were lower; but this is no longer the case.

It is true that the company has this summer had the benefit of the traffic created by the presence of the military camp at Framingham; but this was also true in the summer of 1916. It is also true that the trolley freight business continues to develop in a manner which is encouraging. Taking all factors into consideration, however, there is no reason to believe that the company will be able to earn, if the proposed new schedule of passenger rates is allowed to become effective, more than a fair return upon its investment. Unless conditions change, indeed, it will be fortunate if it is able to earn 6 per cent upon its common stock.

In behalf of the remonstrants, however, it was strongly urged that, even if the company's need for additional revenue should be conceded, the proposed method of obtaining such revenue is

illogical and unjust in many respects, that it ought not to be permitted without important modifications, and, in view of its novel character, that it would be wiser not to allow it at all until the results from the experiment now being tried by the Concord, Maynard and Hudson Street Railway Company are fully known. More specifically it was urged: —

(1) That the new schedule would fall with unequal weight upon various sections and would operate with injustice to many people who have established their homes upon the basis of the general system of charging now in force.

(2) That the minimum fare of 6 cents for any ride, however short, is inconsistent with a mileage system of rates, and, if permitted, would preserve the chief public disadvantage of the present system of charging.

(3) That the sections of approximately one mile in length, upon which the proposed new system of charging is based, are in certain cases made to end at points unnecessarily inconvenient to the public.

Before considering these claims, it should be said that not all of the communities affected joined in this remonstrance. The two cities from which the company takes its name, Boston and Worcester, were not represented at the hearings, nor was the city of Newton, nor certain of the smaller towns. The chief objection came from the towns of Natick, Wellesley, Hudson and Southborough, and the city of Marlborough.

At the outset, the fares of most interurban street railway lines in Massachusetts were based upon the provisions of local franchise grants, a common requirement being a uniform 5-cent fare within town or city limits. This seems to have been true in the case of the Boston and Worcester; but changes have been made from time to time and the fares now in force follow no recognizable general principle and are clearly inconsistent and irregular in many respects. The company already has a 6-cent unit of cash fare, so that, if rates are further to be raised, the choice is between the present structure with a 7-cent unit and some entirely new system such as is proposed. A minimum of 7 cents for any ride, however short, is open to objection, and, if the increase should be made in this way, the irregularities and inconsistencies would remain, with the prospect that the Commission would some day be asked the perplexing question why 7 cents should carry a passenger but 3.16 miles on one part of the road and 9.85 miles on another with no greater density of traffic. On the other hand, the adoption of a mileage system would make possible a general advance in rates without increasing the mini-

imum for short hauls, and would place fares upon a reasonably uniform and consistent basis. It is the system followed in the case of practically all steam railroad fares and is quite as logical in its application to many electric interurban lines.

The Boston and Worcester was built primarily for fast through service rather than for local service, and, if it were just beginning operation, the reasonableness and propriety of a mileage system of charging would hardly be questioned. But it is not a new road and development has proceeded along somewhat different lines. In considering a similar situation in the Concord, Maynard and Hudson case, already referred to, the Commission had this to say:—

. . . Upon abstract grounds, also, the new system of charging, . . . as applied to a street railway line interurban in character and operating through a somewhat sparsely settled territory with a fairly uniform density of population, seems fair and reasonable, and less open to a charge of discrimination than the system now in force. As a practical matter, however, the schedule is open to the objection that it somewhat violently disarranges a method of charging which has been in effect for a comparatively long period of years and to which conditions have become adjusted, and that it falls with unequal weight upon the patrons of the road. The voluntary and lawful establishment of a certain method of charging and its continuation in force for a period of years, even though an element of apparent discrimination is involved, undoubtedly create equities which a company ought not wholly to disregard.

These equities, however, do not attach to the occasional rider, but rather to the resident patron who makes habitual use of the road between designated points and has, perhaps, established his home in the reasonable expectation and belief that the present general system of charging, apart from any change in the unit of fare, would be continued.

The point is best illustrated in the present instance by the case of Overbrook, a settlement in the western part of the town of Wellesley. By the terms of the original location grant in that town, the Boston and Worcester was prohibited from charging more than 5 cents "for a single fare over its railway between any part of Wellesley and the point of junction with the Boston Elevated Railway Company's tracks in Brookline," the maximum distance being 8.36 miles. The Supreme Court found this provision to be void (188 Mass. 250) and the regular rate of fare between the limits specified was in 1907 made 10 cents, becoming 12 cents in 1909. In 1907, however, the company also introduced a 20-ride ticket book selling for \$1.50, the effect of which

was to make the fare between Chestnut Hill and any part of Wellesley $7\frac{1}{2}$ cents for many riders, and the price of this book was not increased when the unit of cash fare was changed from 5 cents to 6 cents in 1909. Because of this low rate, in recent years a considerable number of persons of small means doing business in Boston have bought land and established homes in the Overbrook section. They now complain that, if the mileage system of charging should be adopted, their fare would be increased from $7\frac{1}{2}$ cents to 16 cents at the maximum, and, if tickets are used, to 13.6 cents at the minimum, and they claim that such an increase would be ruinous to the district in which they live.

This Overbrook situation is the most striking example of the unequal effect of the new schedule, and one which was given especial prominence at the hearings. The Commission must be governed in the matter, however, by what is, on the whole, fair and reasonable and in the general public interest, having in mind the entire public which the company serves; and the choice is between a horizontal increase, by means of a 7-cent fare, and some mileage system such as the company proposed. Viewed in this light and upon present evidence, it seems to the Commission that the mileage system is, on the whole, more equitable, is likely to prove more generally satisfactory, and holds forth greater promise for the future, both to the company and to the public. But this does not mean that it need be adopted in precisely the form which the company proposes or without making reasonable adjustments to meet special existing conditions. In the making of public utility rates a fixed and mathematical rule can seldom be applied with exact justice, and public supervisory commissions are warranted in taking into consideration, to an extent, not only the cost but the value of the service rendered and equities which may have arisen from long established custom or practice.

In this case it is true that certain patrons of the road, notably those at Overbrook, have been receiving relatively more for their money than others; but the situation is one for which the company has a responsibility. It is reasonable that such patrons should bear a larger share of the burden of an increase in rates, but there is a limit beyond which it is not just nor wise to go. It is the regular rider, however, rather than the occasional rider, who is particularly entitled to consideration. The company has partially recognized this principle by proposing to sell mileage

and round-trip tickets at a discount of 15 per cent from the regular rates; but this does not wholly meet the needs of the situation. Even with the use of such tickets, the fare between Chestnut Hill and Overbrook would still be increased from 7.5 cents to 13.6 cents, or 81.3 per cent, whereas, in our judgment, 50 per cent ought reasonably to be the maximum. The mileage and round-trip tickets, moreover, can be used by the occasional as well as the regular rider. Both these objections may be met by selling 20-trip ticket-books, limited to the person named thereon and good for a period of one month, which will enable the purchaser to ride between any two designated points upon the railway at a rate 50 per cent in excess of the existing cash rate or of the trip ticket rate where such tickets are now sold. In the case of Overbrook, the new rate available by the use of these ticket-books would thus be $11\frac{1}{4}$ cents.

The purpose of these 20-trip tickets would be to provide a link between the old and new tariffs and to prevent, in any given case, throwing too severe a burden upon regular riders by the change. While they would, in our judgment, meet the equities of the situation, it is also probable that they would not seriously affect the revenues of the company. The instances where they would be used are comparatively few and no large volume of traffic would be involved. They would also have the secondary effect of encouraging traffic.

The remonstrants also urge that the proposed minimum fare is too high. Once a mileage system is established, it is true that there is, in theory at least, no necessary reason why 6 cents should be the minimum, and 5 cents would have certain obvious advantages. Where sections one mile in length are used, however, and the rate is 2 cents per mile, it is difficult in practice to apply a 5-cent minimum. It can be done, but complexities result which make the collection of fares difficult for the conductor, especially where, as in this case, the cars are operated at high speed. The company is reluctant to introduce these complexities and claims that it has, in effect, established a minimum of approximately 5 cents through the mileage tickets which it proposes to sell. By using these tickets a passenger will be able to ride any distance up to three miles for 5.1 cents. Nor will any large initial investment be required to secure this advantage, for tickets will be sold in packages of 100 for \$1.70. It is also true that 6 cents is the present minimum fare, and one to which the public served is accustomed. Under the circumstances, while

the Commission is impressed with the arguments in favor of a 5-cent minimum, it does not feel that it would be justified, in the initial stages of the experiment at least, in requiring such a change to be made.

Certain of the remonstrants further urged that the mile sections had been made to end, in certain instances, at points unnecessarily inconvenient to the public served. The instances brought to the attention of the Commission were in Wellesley and Westborough. It appears that the company has based its measurements upon the Chestnut Hill terminus, and has made the proposed fare limits conform as near to the mile points as possible, placing them, however, at existing stops. The result is that the sections are in some cases slightly less than a mile in length and in others slightly more. Without interfering with the basic plan, minor adjustments are in some cases possible and desirable, and, after a conference with the Commission, the company has agreed that the adjustments suggested in the two towns above named are not unreasonable, and these and one or two other adjustments of similar character will be made.

With the changes thus suggested, the Commission finds that the proposed new rates are just and reasonable and the schedule will be allowed to become effective, upon the understanding, however, as in the Concord, Maynard and Hudson case, that the approval is for an experimental period of six months and that the hearings are to be reopened at the end of that time, upon application of any interested party, for further consideration of the matter upon the basis of the experience thus gained. As already stated, the remonstrants have urged that all action be postponed until the results of the Concord, Maynard and Hudson trial are definitely known; but we think such postponement would not be wise. The Concord, Maynard and Hudson road is a small country line, and it is very desirable that the new plan should also receive a test upon a larger and more representative system. What the best course is to pursue with respect to street railway fares in this commonwealth, especially upon interurban lines, is still an open question, and it is fair to say that the street railway managers are not themselves in entire agreement. At the present time the Bay State Street Railway Company is trying the experiment of 6-cent fares, selling tickets at the rate of 20 for \$1.00, good on certain of its city lines $5\frac{1}{2}$ days in the week. The Middlesex and Boston Street Railway Company, which operates in territory contiguous to the Boston

and Worcester, is trying 6-cent fares on certain lines, 7-cent fares on others, and 8-cent fares on still others, the unit varying with the density of traffic and earnings. If the Boston and Worcester, as well as the smaller Concord, Maynard and Hudson, is permitted to try the mileage system, at the end of the experimental period both the companies and the Commission will be in possession of a fund of knowledge, derived from actual experience with various units of fare and methods of charging, which will be of great value in determining the course which ought to be pursued for the future in the general interest.

ORDER.

Notice of the Boston and Worcester Street Railway Company of proposed change in rates of fare upon its railway.

It appearing that on July 18, 1917, an order was entered suspending until September 1, 1917, the rates and charges stated in the schedule described in said order; and that said rates and charges were further suspended until October 1, 1917, by an order dated August 29, 1917, and

It further appearing that a full investigation of the matters and things involved has been had, and that the Commission on the date hereof has made and filed a report containing its findings of fact and conclusions thereon, which said report is hereby referred to and made a part hereof; it is

Ordered, That the Boston and Worcester Street Railway Company be hereby notified that it may readjust the rates and charges on all its lines, within thirty days of the date hereof, upon not less than five days' notice to the Commission and the general public, by filing and posting in a conspicuous manner in its waiting rooms and cars, in the manner prescribed in section 20, of chapter 784, of the Acts of 1913, a schedule readjusting its rates and charges for the transportation of passengers in accordance with its notice and schedule filed with this Commission on June 25, 1917, except in the following particulars: —

(1) Change the fare limit located at Kaiser's stop, Wellesley, to the corner Cedar and Worcester streets, Wellesley; the fare limit located at corner Longfellow road and Worcester street, Wellesley, to the corner Oakland and Worcester streets, Wellesley; the fare limit located at Abbott Estate stop, Wellesley, to the corner Kingsbury and Worcester streets, Wellesley; the fare limit located at Child's Crossing stop, Wellesley, to the corner Weston road and Worcester street, Wellesley; the fare limit at Middle Road bridge, Southborough, to Parkerville Road bridge, South-

borough; the fare limit at East Main street, Westborough, to Lyman street, Westborough; the fare limit at Turnout No. 2, Framingham, to the corner Lakeview and Union avenues, Framingham; and the fare limit at the corner Ash and Mechanic streets, Marlborough, to the corner Ash street and private right of way, Marlborough.

(2) Provide for the sale of 20-trip ticket-books, limited to the person named thereon and good for a period of one month, between any two designated points upon the railway at a rate per trip not more than 50 per cent in excess of the present cash fare between such points or of the rate now available through the use of trip or round-trip tickets.

It is

Further ordered, That the Boston and Worcester Street Railway Company be hereby notified and required to cancel the rates and charges stated in the schedule specified in said orders of suspension.

It is

Further ordered, That a copy of this order be filed with said schedule at the office of the Commission, and a copy hereof be forthwith served upon the Boston and Worcester Street Railway Company.

By the Commission,

ANDREW A. HIGHLANDS,

Secretary.

THE CONCORD, MAYNARD AND HUDSON RATE CASE.

Petition of Concord, Maynard and Hudson Street Railway Company for authority to make certain changes in rates of fare, fare limits and transfers upon its railway.

ROBERT H. HOLT, Esq., for Concord, Maynard and Hudson Street Railway Company.

ARTHUR E. STONE for Boston and Worcester Street Railway Company.

A. W. LEE for Concord and Sudbury Lighting Company.

GEORGE E. OSGOOD, Chairman, for Selectmen of Hudson.

CHARLES A. HERSEY }
GEORGE W. BRADLEY } Selectmen of Stow.

HENRY B. WHITCOMB for Board of Trade of Hudson.

The petitioner, the Concord, Maynard and Hudson Street Railway Company, represents that it proposes to file with the Commission a new schedule of fares, a copy of which is attached to the petition, and that the increase of rates provided in this new schedule is "necessitated by the very unusually high price of coal . . . as well as other unusual prices and conditions which . . . create an emergency requiring prompt and immediate action." It asks the Commission to allow the new rates to become effective "as a temporary and emergency schedule," without requiring the usual 30 days' notice.

Subsequent to the filing of this petition the company printed and distributed, to all the voters in the five towns which it serves, a letter, dated April 12, 1917, describing the contemplated changes in rates and stating the reasons therefor. A public hearing was held on April 18, 1917. The procedure adopted by the company is somewhat unusual, but the statute undoubtedly gives the Commission authority to grant the petition if good cause is shown. The following provisions of section 20 of chapter 784 of the Acts of 1913 are applicable: —

. . . Unless the commission otherwise orders, no change shall be made in any rate, joint rate, fare, telephone rental, toll, classification or charge, or in any rule or regulation or form of contract or agreement in any manner affecting the same as shown upon the schedules filed in accordance with

this act, except after thirty days' notice to the commission, which notice shall plainly state the changes proposed to be made in the schedule then in force and the time when such changes shall take effect, and such notice to the public as the commission shall order, to be given prior to the time, fixed in such notice to the commission, for the changes to take effect. The commission for good cause shown may allow changes without requiring the thirty days' notice, under such conditions as it may prescribe, and may suspend the taking effect of changes under the circumstances and in the manner hereinafter provided.

The Concord, Maynard and Hudson Street Railway Company operates, in all, 18.9 miles of track. The main line is about 14 miles long and runs from Concord Center through the towns of Acton, Maynard and Stow to Hudson Center, connecting with a line of the Middlesex and Boston Street Railway Company at Concord, and with lines of the Boston and Worcester and the Worcester Consolidated companies at Hudson. A branch about four miles long extends from Maynard Center to West Acton. The following table shows the population of the territory served, at successive periods:—

	1900.	1905.	1910.	1915.
Acton,	2,120	2,089	2,136	2,151
Concord,	5,652	5,421	6,421	6,681
Hudson,	5,454	6,217	6,743	6,758
Maynard,	3,142	5,811	6,390	6,770
Stow,	1,002	1,027	1,115	1,127
Total,	17,370	20,565	22,805	23,487

The road began operation in 1901. Originally there were three companies, the Concord, Maynard and Hudson, the Concord and Clinton, and the Lowell, Acton and Maynard. Consolidation with the Concord and Clinton was approved by the Board of Railroad Commissioners on February 1, 1902, and with the Lowell, Acton and Maynard on January 27, 1911. Since 1912, the company has been under the control of a voluntary association known as the Massachusetts Consolidated Railways, which now owns practically all of its stock and also controls two other street railway companies, the Connecticut Valley and the Northern Massachusetts.

The original unit of fare was 5 cents, but since March 1, 1908, it has been 6 cents on the main line, a change apparently made

with little opposition. This line is divided into four overlapping fare zones, the through fare being 24 cents. The zones are comparatively long and average about $4\frac{3}{4}$ miles. The longest, from Stow to Hudson, is 5.29 miles in length. On the branch line, the unit fare is still 5 cents, but the two zones are much shorter, averaging about $2\frac{1}{2}$ miles. Passengers boarding eastbound cars within the town of Concord are entitled to a transfer by which they may ride upon the connecting Middlesex and Boston railway to the town line. At the other end, passengers boarding westbound cars within the town of Hudson are entitled to a similar transfer, good on the Worcester Consolidated or Boston and Worcester railways to the town line. Reverse transfers given by the other roads are accepted by the Concord, Maynard and Hudson. Transfers taken up are redeemed by the issuing company at 3 cents apiece, so that each company receives but 3 cents for its portion of the joint ride.

The company now proposes to revise its rates of fare in a radical way, by adopting a system of charging new to Massachusetts, so far as street railways are concerned. The proposed change is described, in its letter of April 12 to the voters of the five towns, as follows: —

To relieve the situation, we are proposing to try as a temporary measure a new system of fares, one which we think is more just than the system now in use on this line and elsewhere. We propose to charge two cents a mile for the distance actually travelled, with a minimum charge of six cents. The road will be divided into mile limits or zones by mile posts, and for six cents a passenger may ride any distance within three consecutive mile zones, and will be required to pay two cents for every mile or fraction of a mile beyond that. This is the same system as that used on steam railways. In some cases it will reduce the amount you are accustomed to pay; in others it will increase it. Of course, if it does not increase the total revenue of the company, it will afford no remedy to the present situation. We are not sure that it will, but we are willing to try it, and we feel that it will appeal to our patrons as a sensible and a just method of arranging fares.

The system is one which has come to be known as the "copper zone system" and has recently been adopted by the Shore Line Electric Railway Company of Connecticut. It is also in use at various points in the Middle West.

Under this system the conductor has a metal holder into which a pad of paper checks is inserted. The checks are in duplicate, one part extending outside the box, and upon each is printed

all the mile post stations. The holder is provided with sliding index cutters, and, when a fare is collected, the conductor sets these cutters opposite the stations between which the passenger wishes to ride and tears off the receipt. Notches made by the cutters indicate the stations upon the receipt, which is given to the passenger and which is collected when he leaves the car. Upon the window posts clips are provided into which these duplicate checks, or receipts, may be inserted while passengers are on the car, so that the conductor may readily inspect them. Provision is also made so that the check may be used, when occasion requires, as a transfer. The issuance and collection of these checks upon open cars is somewhat difficult, and the Shore Line company for this reason is remodeling such cars by providing an aisle in the center and placing gratings on the sides, so that passengers must board and leave at either end, as on closed cars. It is estimated that such remodeling can be done at a cost of about \$250 per car. In the present case the company proposes "to try to get along with our present facilities and not convert the cars" (Record, p. 28).

If this system were adopted, certain fares would, as the company states, be reduced, particularly upon the West Acton branch, and others would remain unchanged. In the majority of cases, however, there would be an increase of varying amount. The maximum increase, it seems, would be in the case of the ride between Stow Center and Hudson, where the fare is now six cents, and where it would become 12 cents, an advance of 100 per cent. It is proposed to accept transfers from other companies at either end of the line for a ride covering but one zone, while transfers to their railways will still be issued as at present. Books of 30 coupons will be sold for 60 cents each and books of 150 coupons for \$2.80, each coupon being good for transportation in lieu of 2 cents cash. Pupils' tickets, as provided by law, will be sold in books or strips of 30 coupons for 30 cents, half the rate of the regular fare.

Precisely what increase in total revenue the new rates will produce, if adopted, no one can with confidence predict, the uncertain feature being the effect upon traffic. Complete counts of all passengers carried by the road during the three days from April 23 to April 25, inclusive, indicated that if the new rates had been in effect and the same number of passengers had ridden the same distances, the revenue would have been increased from 15 to 16 per cent.

The capitalization of the company on December 31, 1916, was as follows: —

Capital stock,	\$235,000
Mortgage bonds,	230,000
Notes payable,	50,000
Total,	<u>\$515,000</u>

The stock and bonds were all issued under the supervision and with the approval of the Board of Railroad Commissioners. Much of the floating indebtedness is of long standing and what it represents is not clear. A substantial part of it apparently was incurred for property expenditures, in the early days, which the Railroad Commissioners were unwilling to capitalize permanently. Some of it, without doubt, represents later additions and improvements which might properly be capitalized. Funds amounting to \$13,657 have been invested in a projected extension to Belmont, which has been abandoned and ought to be written off the books. The total permanent investment shown by the returns amounts to about \$29,000 per mile of single track. While this figure is not low for a road of this type, it can hardly be considered excessive.

The net results from the operation of the company year by year have been as follows: —

YEAR.	Net Income.	Dividends.	Rate (Per Cent).
1901 (1 month),	\$1,746 04	—	—
1902,	8,186 85	—	—
1903,	5,198 59	—	—
1904,	7,280 30 ^d	—	—
1905,	29 30	—	—
1906,	6,300 89	—	—
1907,	7,423 95	—	—
1908,	9,490 42	—	—
1909,	9,248 02	—	—
1910 (9 months),	5,417 00	—	—
1911,	10,831 14	\$2,000	1
1912,	11,642 81	9,050	4
1913,	7,584 49	—	—
1914,	6,261 53	7,050	3
1915,	8,611 98	9,400	4
1916,	8,691 62	—	—

^d Deficit.

These figures are for the fiscal years which ended on September 30, until 1910, and thereafter have ended on June 30. It will be noted that in the year ended June 30, 1916, no dividends were paid. In the following six months, however, a dividend of 4 per cent was declared. The table shows that under the original management the policy with respect to dividends was conservative. No dividends at all were paid and any net income remaining after the payment of operating expenses and fixed charges was allowed to accumulate in the surplus fund. Beginning with 1911, the year before the Massachusetts Consolidated Railways assumed control, dividends have been paid, although not in every year, which have at times made it necessary to draw upon surplus. Amounting to \$43,425 in 1912, it had diminished to \$27,623 on December 31, 1916. This decrease, however, is partially offset by the fact that in 1912 the company had set aside no depreciation or other reserves, whereas on the latter date the accumulations in such accounts amounted to \$15,074. It is also true that the dividends have been small and have averaged, since June 30, 1910, but 2.46 per cent per year. The average throughout the life of the company has, of course, been much smaller even than this figure.

In recent years, gross income has increased slowly and operating expenses more rapidly. The year ended June 30, 1912, was the first full year after the consolidation with the Lowell, Acton and Maynard. Earnings and expenses since that year have been as follows:—

YEAR.	Gross Income.	Operating Expenses.
June 30, 1912,	\$71,376 24	\$43,768 45
June 30, 1913,	73,551 25	49,947 35
June 30, 1914,	77,001 50	54,414 81
June 30, 1915,	76,516 93	49,840 21
June 30, 1916,	78,598 86	51,514 07
Dec. 31, 1916,	83,030 59	56,499 33

Gross income increased during the period 16.3 per cent and operating expenses 29.1 per cent.

The following table shows the amounts which have been expended for maintenance and depreciation and charged to operating expense in each fiscal year throughout the life of

the company up to June 30, 1916, with the per cent of operating revenues in each case: —

YEAR.	Amount.	Per Cent.
1902,	\$6,140 29	13.0
1903,	4,600 72	7.8
1904,	6,494 75	12.0
1905,	6,818 99	13.4
1906,	6,360 87	10.5
1907,	5,658 51	9.4
1908,	5,706 34	9.9
1909,	10,387 59	17.0
1910 (9 months),	6,488 10	15.7
1911,	12,183 18	19.1
1912,	12,603 91	17.6
1913,	14,611 60	19.8
1914,	16,369 18	21.2
1915,	14,831 57	19.4
1916,	13,724 34	17.8

It will be noted that the amounts expended for this purpose have, as might have been expected, grown in recent years as the property increased in age. Since 1910, additional amounts, charged to the profit and loss account and averaging \$2,897 per year, have been written off the property account or credited to depreciation reserve. It further appears that actual maintenance expenditures in the year ended June 30, 1916, were understated in the operating account, and that \$4,260.38 was incorrectly and improperly charged to "other current assets" instead of to operating expense. Notwithstanding these expenditures, it is clear that the existing depreciation reserve is wholly inadequate, and the Inspection Department of the Commission reports, after an examination of the property, that it has been maintained in only fair condition and that repairs beyond the normal average are needed in the case of both track and equipment.

The road is managed by general officers, located at Greenfield, who also manage the two other companies — the Connecticut Valley and the Northern Massachusetts — which are under the control of the Massachusetts Consolidated Railways. The salaries of these general officers are shared in proportion to gross earnings, the Concord, Maynard and Hudson's share being one-

seventh of the total and amounting to about \$2,150 per year. In addition, the road has the undivided services of two officers, the president and assistant superintendent, whose combined salaries amount to \$1,800 per year. Some small companies pay less for management, but the total charge cannot be held to be unreasonably high. The operating expense per car mile — 19.04 cents in the year ended June 30, 1916, — is below the average, due, apparently, to a comparatively low labor cost. The cost of power is relatively high, but this would be expected of a small inland plant. A recent report by an outside expert indicates, however, that greater economy is possible in the operation of this plant. Rolling stock shows evidence of neglect, particularly in respect to trucks and motors, and it seems that a better system of inspection and maintenance, while perhaps more expensive in the first instance, would, in the end, produce better results. The faults of management are, however, faults induced by low-earning capacity, and operating expense, on the whole, should be greater rather than less if the property is to be well operated and maintained.

The payment of dividends in recent years without adequate provision for depreciation or, indeed, maintenance, is open to criticism; but the amounts paid have been so small, especially when averaged throughout the life of the company, that they do not seriously affect the situation. As the Commission said in the Middlesex and Boston rate case (2d Annual Report, P. S. C., p. 137): —

. . . Resolving every reasonable doubt against the petitioner's management, we are driven irresistibly to the conclusion that at no time have the rates charged been adequate to meet the fair cost of the service. Up to the present time, as between investors in and patrons of this street railway company, the patrons have had much the better of the bargain.

The fact that dividends have been paid at times practically at the expense of the property merely neutralizes any claim which might otherwise have been made to a return higher than normal. Under the circumstances, we think that the company is entitled to a return of 6 per cent upon the investment represented by its outstanding stock and bonds and by one-half its floating debt. In view of the lack of satisfactory information in regard to this debt, this is a liberal estimate. On this basis, the company would be entitled to a return of 6 per cent upon \$490,000, amounting to \$29,400 per year. The net amount available for

the payment of interest and dividends in the year ended December 31, 1916, after allowing for \$2,253.24 improperly charged to "other current assets" which should have been included in operating expense, was \$20,780. In other words, without allowing for any more adequate provision for depreciation and maintenance than was actually made, the income fell \$8,620 below the required figure.

The company, however, bases its claim for an increase in rates, not only upon the financial results from the operation of recent years, but upon the fact that the price of materials and supplies, and particularly the price of coal, has substantially increased in the past few months. It submitted evidence showing that coal for which it paid \$3.50 per ton f. o. b. Boston, in 1914, gradually increased in price so that it cost \$6.50 per ton in the latter part of 1916, while the last order, for 500 tons, executed on February 13, 1917, was at the rate of \$10.50 per ton. The total bill for fuel in the year ended June 30, 1916, was \$10,019, and the average cost was \$5.27 per ton. It is therefore obvious that, if the price continues at the present rate, the operating expense of the company during the current year will be very materially increased. It seems that the company has paid a higher price than certain other companies have paid, due to its insistence upon New River coal, which it considers more economical than varieties which can be obtained more cheaply; but there is no doubt that the cost of all varieties has greatly increased.

In the three months ended March 31, 1917, operating revenue was \$17,884, as compared with \$18,157 for the previous year, while operating expenses increased from \$13,373 to \$16,620. The item of fuel alone advanced from \$3,322 to \$4,855. Gross earnings during the period were insufficient by \$2,888 to pay operating expenses and fixed charges, while last year, for the same three months, they yielded a surplus of \$590. The general phenomenon of rising prices during recent years has been aggravated by the conditions created by the European war. Transportation by rail and by water, the labor market, and the demand for coal, steel, copper and other materials used by street railway companies have all been seriously affected, and no one can now foretell how long the disturbance will continue. While it is probable that the prices of coal and certain other commodities, which are now maintained at an artificial level, may be somewhat reduced, either by change of conditions or by intervention of the federal authorities, it also seems probable that the present

era of high prices is not temporary in character but will last at least during the duration of the war, a period in itself very uncertain, and that it will probably continue even beyond that time.

Upon the evidence, the proposed advance in fares would not increase passenger revenue at the outside more than 16 per cent, and it is far from certain that it would yield so large a percentage of increase. It is conceivable that it might not yield any increase at all. Passenger revenue for the year ended December 31, 1916, was \$79,763.15, and upon this basis a 16 per cent increase would amount to \$12,761.94. Under the circumstances, this cannot be considered unreasonable. Indeed, if the property is to be maintained in first-class operating condition, and adequate provision is to be made for depreciation, a greater increase would be permissible. From the standpoint of net financial results, no objection can fairly be made to the proposed schedule. Upon abstract grounds, also, the new system of charging which it involves, as applied to a street railway line interurban in character and operating through a somewhat sparsely settled territory with a fairly uniform density of population, seems fair and reasonable and less open to a charge of discrimination than the system now in force. As a practical matter, however, the schedule is open to the objection that it somewhat violently disarranges a method of charging which has been in effect for a comparatively long period of years and to which conditions have become adjusted, and that it falls with unequal weight upon the patrons of the road. The voluntary and lawful establishment of a certain method of charging, and its continuation in force for a period of years, even though an element of apparent discrimination is involved, undoubtedly create equities which a company ought not wholly to disregard.

These equities, however, do not attach to the occasional rider, but rather to the resident patron who makes habitual use of the road between designated points and has, perhaps, established his home in the reasonable expectation and belief that the present general system of charging, apart from any change in the unit of fare, would be continued. The proposed schedule of fares is admittedly experimental, however, and upon consideration it has seemed to the Commission that the situation which has just been described may be met by a further change which is also somewhat experimental in character. The proposed new system of charging, which is based upon a uniform charge of 2 cents a

mile, is similar to the system in force upon the steam railroads. A feature of this system upon these railroads is the issuance of commutation tickets. These tickets are founded upon the theory that the steady rider is entitled to a concession in fares, not because he is a workingman or belongs to any other class of individuals, but because he makes a frequent and continuous use of the railroad facilities, which is to the company's advantage. These tickets, as is well known, are sold for a lump sum upon a monthly basis. If all the coupons are used within the monthly period, the purchaser can obtain a very low rate per ride. If he travels less steadily and does not use them all, his rate is correspondingly increased.

It has seemed to the Commission that the principle of these commutation tickets, which has seldom been adopted in the case of street railway fares, could with advantage be employed in the present instance to mitigate the apparent injustice which might otherwise result from a sudden change from the present to the proposed new system of charging. The matter has therefore been taken up in conference between the Commission and the company, and the latter has agreed that it will issue, in connection with the new schedule, commutation ticket-books upon the basis of 52 rides for a period of one month, which will enable the purchaser to ride between any two designated points upon the railway, if he uses all the coupons, at a rate equal to 75 per cent of the regular rate of fare between these points, where that fare is more than 6 cents. The Commission also feels that the zone division point which, under the plan proposed, has been located about one-sixth of a mile west of Stow Center ought to be located at the Center. With this change, persons living in Stow and doing business in Hudson could, by the daily use of the commutation tickets, travel to their work each working day at a fare of $7\frac{1}{2}$ cents per ride, instead of paying the 10 cents which would be the regular cash rate. In riding to Concord, by a similar use of tickets, they could make the journey for $13\frac{1}{2}$ cents, or actually less than the fare of 18 cents which is now in force. Furthermore, if their work took them to Maynard, which is the nearest manufacturing center to Stow, under the new schedule they could, without using tickets at all, travel for 6 cents, or exactly the fare which they now pay. For the increased rate in one direction, therefore, there would be compensation to the people of Stow on travel in the other direction. Looking at the matter from the standpoint of the company, the tickets would

be of advantage and would be used only in those cases where there are riders who make steady use of the railway between two particular points. As a practical matter, the tickets would not be used in any instance by the occasional rider and the benefit which they offer would accrue, as it should, to the patron who makes a continuous weekday use of the railway facilities.

Under the system which is to be adopted, the ticket-books will not be transferable and will be good only in the hands of the purchaser. If, at the end of the month, coupons remain unused, the holder may, by presenting them at the office of the company, receive a rebate equal to the difference, if any, between what the rides which he has taken have cost him and what they would have cost if he had paid cash instead of using the ticket.

With the changes thus indicated, the company will be permitted to file a new schedule and to make it effective upon short notice and without further hearing. An order to this effect will be entered as soon as such a schedule has been filed. As the new rates, however, are regarded even by the company as experimental, and as it has asked only for the privilege of putting these rates into temporary effect, their introduction will be allowed upon condition that six months after introduction the company will assume the burden of proof of showing that the new rates ought to remain in force.

By the Commission,

ANDREW A. HIGHLANDS,

MAY 25, 1917. [P. S. C. 1723]

Secretary.

THE HOLYOKE RATE CASE.

Petition of the Holyoke Street Railway Company for authority to increase its rates of fare for passengers or decrease the present distances of travel on its lines, or both.

P. S. C. 1775.

DECIDED DECEMBER 31, 1917.

WILLIAM H. BROOKS for Holyoke Street Railway Company.

FRANK J. O'NEIL for City of Holyoke.

ARCHIE J. OSBORNE

EDWARD J. MEACHAM } for Holyoke Chamber of Commerce.

WILLIAM D. JUDD

JOHN JENNINGS

MICHAEL B. HOULIHAN } for City of Chicopee.

FRANK HUDSON

WILLIAM S. RATHBURN } for Fairview District of Chicopee.

EDWARD S. ALDEN

REPRESENTATIVE JOHN CRONIN } for Central Labor Union of Holyoke.

GEORGE F. KELLY for Town of South Hadley.

GEORGE F. HOBART for Town of Amherst.

The petitioner, the Holyoke Street Railway Company, represents "that the prevailing conditions are such that either compensation for the transportation of passengers shall be increased, or that the present distances for such transportation shall be decreased, or that both increase and decrease shall be made", and requests the Commission to "authorize such increase in compensation or such decrease in distances, or both" as it may deem proper. No new schedule of rates has been filed, but certain alternative methods of increasing passenger receipts have been suggested and the Commission is asked, if it should find that the company is fairly entitled to more revenue, to determine the particular method by which it shall be obtained. This procedure is not usual, but is feasible under the statute, as was explained in the Concord, Maynard and Hudson case, decided May 25, 1917.

The methods of increasing revenues which have been suggested by the company are hereinafter considered. For the present it is sufficient to say that the gain in income anticipated is in the neighborhood of \$150,000. The lowest estimate presented was about \$132,000. The total passenger revenue for the year ended June 30, 1917, was \$692,995.56.

The Holyoke Street Railway Company now operates about 58 miles of line and about 72 miles of track. All that it operates it owns, with the exception of about a mile of track leased from the Mount Tom Railroad Company and running from the base of Mount Tom in the city of Holyoke to a pleasure resort at the top. The city hall in Holyoke is the operating center, and the lines in general, radiate from this point. One extends towards Springfield, connecting with a line of the Springfield Street Railway Company; another towards Northampton, connecting with a line of the Northampton Street Railway Company; a third to the town of Westfield; three cross the Connecticut river to Chicopee; and one crosses to South Hadley and thence through a notch in the Holyoke range to Amherst, Pelham and Sunderland. The following table shows the population of the territory served at successive periods: —

CITIES AND TOWNS.	1890.	1900.	1910.	1915.
Amherst,	4,512	5,028	5,112	5,558
Chicopee,	14,050	19,167	25,401	30,138
Granby,	765	761	761	828
Holyoke,	35,637	45,712	57,730	60,816
Pelham,	486	462	467	499
South Hadley,	4,261	4,526	4,894	5,179
Sunderland,	663	771	1,047	1,278
Total,	60,374	76,427	95,412	104,296

Between Springfield, Holyoke and Northampton the street railway line is in competition with the Boston and Maine Railroad, upon which fares at lower than the normal rate are charged because of the competition.

The Holyoke Street Railway Company was organized as a small horse car line in 1884. All of its stock and bonds have been issued under the supervision of the Board of Railroad Commissioners or this Commission, with the exception of the original issue of \$50,000 stock. The integrity of this issue was established

by subsequent appraisals. Much of the stock has been issued at a premium, these varying from \$15 to \$50 per share and aggregating \$276,160, so that the average price paid per share of stock has been \$120.50. The permanent investment per mile of main track on June 30, 1916, was \$44,914, a relatively low figure for a city system, comparing with \$45,007 for the Springfield Street Railway Company, \$53,198 for the Worcester Consolidated Street Railway Company and \$53,525 for the Bay State Street Railway Company. All of these companies, especially the Bay State, have a larger proportion of country lines. Appraisals made for the Board of Railroad Commissioners some 15 years ago indicate that the company, in its early history, probably charged the cost of certain additions and improvements to operating expense.

The line from South Hadley to Amherst, Pelham and Sunderland was originally owned by two separate companies, the Amherst and Sunderland Street Railway Company, which began operation in 1897, and the Hampshire Street Railway Company, which began operation in 1902. The Hampshire was leased by the Holyoke company in 1905 at a rental of 5 per cent upon stock, although no dividends had been paid prior to that time. It was consolidated with the Holyoke company on a share for share basis on June 30, 1907, its outstanding stock amounting to \$60,000. Shortly afterward, on July 31, 1907, the Amherst and Sunderland, with \$120,000 stock outstanding, was consolidated on a similar basis. In the 11 years of its operation it had paid small dividends in but 4 years and had accumulated, at the date of consolidation, a deficit of \$26,176.98. The stock of the Amherst and Sunderland was purchased in the interests of the Holyoke company prior to consolidation at a price of \$60 per share, and the Hampshire stock at \$125 per share, the Holyoke stockholders being permitted to subscribe pro rata. The net result, after the consolidation had been effected, was to give the stockholders \$180,000 of Holyoke stock at a discount of \$33,000.

The present unit of fare is 5 cents, except on the Amherst and Sunderland division, where it is 6 cents. No workmen's or other reduced rate tickets are sold, except the half-fare tickets for school children. Few changes in fares have been made since the beginning of electric operation. The ride for a single fare was considerably extended on certain lines, about 17 years ago, by granting transfers at City Hall, and the unit of fare was increased on the Amherst and Sunderland line in 1908 from 5 cents to 6 cents, this being the only instance where fares have been increased.

The distance which may be traveled for 5 cents is comparatively long in certain cases, as the following table will illustrate:—

	Miles.
Fairview to Westfield line,	10.06
Highlands to Westfield line,	9.50
Willimansett to Westfield line,	8.90
North Pleasant street to Westfield line,	8.38
Fairview to Chicopee street,	8.36
Fairview to Chicopee Falls,	7.96
Mount Tom Junction to Boston and Maine Depot,	7.92
Highlands to Chicopee street,	7.80
Mount Tom Junction to City Hall,	7.47
Elmwood to Westfield line,	7.45
Oakdale to Chicopee street,	7.42
Highlands to South Hadley Falls,	7.26

Possible rides of more than 6 miles are frequent. It must not be understood that the average rider travels these distances, but they afford an indication of the facilities available under existing rates.

Until very recently the road has been one of the best paying properties in Massachusetts. From 1892 to 1915, it paid regular dividends of 8 per cent. In the year ended June 30, 1916, it paid 6 per cent, and in the succeeding year, $4\frac{1}{2}$ per cent. According to the returns, all these dividends were earned except those paid in 1903, 1904, 1912, 1914 and 1915, in which years it was necessary to draw slightly upon surplus. Since much of the stock has been issued at a premium, the actual return to stockholders on cash paid in has been less than the rate of dividend. Premiums have been partly offset by the virtual discount of \$18.33 per share on the stock issued in exchange for the Amherst and Sunderland and Hampshire shares, but, allowing for this discount, the return upon cash paid in has been as follows in the past ten years:—

	Per Cent.
1908,	6.44
1909,	6.73
1910 (9 months),	3.36
1911,	6.73
1912,	6.73
1913,	6.73
1914,	6.75
1915,	6.77
1916,	5.06
1917,	3.81
Average,	6.07

Taking the total investment represented by stock, premiums on stock (allowing for the discount above mentioned), bonds and notes payable, and the total net income available for the payment of interest and dividends each year, the per cent earned has been as follows: —

YEAR.	Investment.	Income.	Per Cent.
1908,	\$1,938,534 31	\$119,719 24	6.17
1909,	1,976,636 03	130,551 20	6.60
1910 (9 months),	1,988,636 03	86,016 42	4.32
1911,	2,053,826 94	122,431 29	5.96
1912,	2,098,943 29	121,975 10	5.81
1913,	2,088,874 51	128,284 63	6.14
1914,	2,387,751 65	123,291 85	5.16
1915,	2,847,881 23	142,308 01	5.00
1916,	2,853,017 29	148,615 86	5.21
1917,	2,953,017 29	155,675 08	5.27

The balance sheet on June 30, 1917, was as follows: —

Assets.

Roadbed and track, overhead lines,	\$1,310,550 17
Car equipment,	675,660 87
Land used in operation of railway,	80,049 21
Power house and substation buildings,	597,252 45
Shops, car houses and equipment,	312,275 05
Parks,	75,690 37

Total permanent assets, \$3,051,478 12

Cash and current assets: —

Cash,	\$37,461 35
Material and supplies,	141,324 39
Suspense account,	717 36

Total cash and current assets, \$179,503 10

Unadjusted debits: —

Insurance prepaid,	\$8,927 47
Accounts receivable,	5,974 30
Unpresented tickets,	490 11

Total unadjusted debits, \$15,391 88

Grand total, \$3,246,373 10

Liabilities.

Capital stock,	\$1,342,000 00
Premium on capital stock,	276,160 00
Total stock,	\$1,618,160 00
Funded debt,	\$1,200,000 00
Current liabilities:—	
Loans and notes payable,	\$167,857 29
Accounts payable,	67,764 81
Accrued interest and rental,	36,143 52
Total current liabilities,	\$271,765 62
Unadjusted credits:—	
Premium on funded debt,	\$24,847 86
Accident reserve,	54,062 11
Depreciation reserve,	72,194 14
Wages payable,	303 82
Total unadjusted credits,	\$151,407 93
Profit and loss (surplus),	\$5,039 55
Grand total,	\$3,246,373 10

The "permanent assets" shown above represent the cost of physical property, all of which is in use with the exception of abandoned power apparatus and buildings costing about \$108,000.

The inspection department of the Commission has made a careful examination of the property. It appears that track and roadbed have been well maintained in the past and are now, on the whole, in fair condition. Renewals have recently been somewhat neglected and at least 5 miles of track are in present need of renewal. A considerable portion of the rail in the city streets shows decided surface wear or battered joints. The company exercised good business judgment in anticipating the recent increase in prices and now has on hand about 750 tons of new rail, or enough for about 4.5 miles of track. The inspection department estimates that during the next five years about 20 miles of track should be relaid, and about 95,000 ties renewed, at a total cost of about \$244,000. In addition, about \$144,000 should be expended for renewals and repairs of special work, overhead system, telephones and signals, making a total expense in the five years of \$388,000, or an average of about \$77,600 per year.

That these estimates are conservative is indicated by the fact that the company itself has stated that 6.02 miles of track are in immediate need of renewal and that 28.8 miles ought to be rebuilt during the next five years.

The passenger cars of the company may be classified as follows: —

TYPE.	Number.	Average Age (Years).
Single truck closed,	24	20.0
Double truck closed,	42	9.9
Single truck open,	43	19.2
Double truck open,	30	12.1
Total,	139	15.0

The single truck cars vary between 15 and 26 years in age and the double truck between one year and 18 years. Only 13 of the closed cars are of the semi-convertible type, and these are all that are equipped with prepayment fare boxes. Eight were purchased in 1916 and five in 1913. None of the other cars are really modern. In estimating depreciation requirements the company has placed the average useful life of rolling stock at 20 years. Even if it be taken as longer, it is evident that many replacements ought to be made within the near future. The single truck cars for the most part have outlived their usefulness. Indeed, it is desirable that the company should gradually abandon the larger part of its present equipment and substitute semi-convertible cars which can be used all the year round. While the management feels that the open cars attract traffic in the summer months, properly designed semi-convertible equipment is in certain respects more attractive and the present double equipment unquestionably adds materially to expense of operation. On certain lines one-man cars can probably be used to advantage.

The inspection department reports that the double truck cars are in good or fair condition, although some need paint. Much work has recently been done in overhauling and repairing trucks. The single truck cars have not been as well maintained, but in view of their obsolete character no large expenditures are justified. Out of 384 motors, 186 are of good type and in good condition and 130 are less efficient but still serviceable. The remainder, in the opinion of the department, are not profitable to operate and ought to be disposed of before junk values recede.

In 1914 the company constructed, at a cost of about \$225,000, a modern car house, work shop and office building in Holyoke. The inspection department reports that this is one of the best buildings of its kind in the state. It has decreased maintenance, car storage and inspection costs. The department, however, believes that better results can be secured if the mileage per car per day is furnished to the master mechanic and inspections made on this basis, and also if the night inspection work is placed in his charge and improved in quality. The old car barn at Canal and Grover streets is still in existence, although part of it recently collapsed. It is used for car storage and by the track department, but is inefficient for either purpose. If continued in use, it should be remodeled and rebuilt. A brick car house with auxiliary power station was completed at South Amherst in 1916 at a cost of about \$40,000. The department reports that it is well located and meets the requirements of the division. The old car barn at Sunderland is not now used.

The power generating station is located at South Holyoke. About \$250,000 was spent in 1914 in alterations and improvements and the plant is now in good condition and reasonably efficient. Coal is handled by mechanical appliances, with automatic stokers. The capacity is 33 per cent above the present peak load. The voltage throughout the system is reasonably good, except on the Westfield line where new feed wires are needed.

The Holyoke company has always been regarded as a well-managed property, furnishing good service. Very few complaints as to service have in the past been received by this Commission or its predecessor, the Board of Railroad Commissioners, and none were voiced at the recent hearings. While the Commission has not been able, with the time and facilities at its command, to make an intensive study of the methods of management and operation, the operating statistics furnish no surface indication that the business is not conducted with reasonable efficiency, although changes in equipment would enlarge the possibilities in this direction. The books have been examined by the accounting department of the Commission and at its suggestion an improved system of accounting has been installed, but no evidence of improper expenditures was discovered. The company maintains a park at the foot of Mount Tom and in the summer season operates a cog railway to the top, where there is an observation house and restaurant. In the past these enterprises have not as a rule been

profitable, except indirectly as a stimulant to traffic. In the year ended June 30, 1917, however, the park cleared \$14,529.57 above expenses and the Mount Tom railway and hotel earned expenses and rental.

The following table shows the operating revenue in each of the past ten years and the percentage of increase from year to year: —

YEAR.	Operating Revenue.	PER CENT.	
		Increase.	Decrease.
1908,	\$467,545 65	—	—
1909,	488,919 63	4.57	—
1910 (9 months),	361,390 72	—	—
1911,	567,415 21	16.05 ¹	—
1912,	578,206 88	1.90	—
1913,	616,545 45	6.63	—
1914,	633,636 78	2.77	—
1915,	639,926 76	.51	—
1916,	617,327 87	—	3.53
1917,	711,374 76	15.23	—

¹ Twenty-one months.

On the average, the yearly increase in business has been a little less than 5 per cent. The decrease in receipts in the year ended June 30, 1916, was caused by the strikes which occurred in the summer of 1915 and which caused a suspension of operation for about three weeks. The company estimates that in these three weeks it lost at least \$23,400, representing the difference between the loss in gross receipts and the saving in operating expense. The loss in gross was in the neighborhood of \$45,000. If allowance is made for this loss, the traffic for the year ended June 30, 1917, would show a gain of about 7.4 per cent over the normal traffic of 1916. The average yearly increase for the past three years has been about 4 per cent.

Operating expenses and the ratio of expenses to revenues have been as follows: —

YEAR.	Operating Expenses.	PER CENT.		Operating Ratio.
		Increase.	Decrease.	
1908,	\$311,065 78	-	-	66.53
1909,	321,750 75	3.43	-	65.80
1910 (9 months),	259,378 23	-	-	71.77
1911,	396,973 34	23.37 ¹	-	71.22
1912,	410,601 06	3.43	-	71.01
1913,	434,099 86	5.72	-	70.40
1914,	466,228 95	7.40	-	73.58
1915,	449,786 13	-	3.52	70.26
1916,	423,128 98	-	5.92	68.54
1917,	537,170 26	26.95	-	75.51

¹ Twenty-one months.

The decrease in gross expense and in operating ratio in the years 1915 and 1916 was largely due to the improved facilities provided by the new car house and by the alterations and improvements at the power plant. Previously it had been necessary for the company to have much of its heavy repair work done outside, and the cost of power had been excessive. The heavy increase in expense in the year ended June 30, 1917, was caused, not only by advancing prices of labor, fuel and materials, but also, in part, by the expense of the wage arbitration which followed the strikes of 1915. All told, the company states that this arbitration cost \$33,283.85, much of which was for legal services.

Owing to the rapid increase in traffic and to the large earnings of the park, the year ended June 30, 1917, compared favorably with other years in the recent history of the company, if allowance is made for the cost of the arbitration proceedings. Examination of the books has disclosed that, during this year, \$19,458 was charged to "miscellaneous general expenses" for arbitration expense. If this unusual expenditure had not been necessary, the net divisible income would have been equal to 8.1 per cent on the par value of the outstanding stock, and the income available for both interest and dividends to 5.93 per cent on the entire investment represented by stock, premiums on stock (allowing for the \$33,000 discount in the Amherst and Sunderland and Hampshire consolidations), bonds and notes payable. In support of its

petition for increased fares, therefore, the company relies very largely upon the following claims: —

(1) That in the year ended June 30, 1917, it did not feel the full effect of the prevailing high prices of coal, steel, copper and supplies in general, and that these prices will materially increase expense of operation for some time to come and, in conjunction with certain other factors, decrease net income.

(2) That it did not in this year make sufficient provision for depreciation.

It appears that the company did not feel the recent sharp advance in the price of coal until about March of this year. Prior to that time it was protected by stock on hand and existing contracts. In the calendar year 1916, 8,993 tons of coal were consumed at a total cost of \$39,369.32, or about \$4.38 per ton. This was based on a price of about \$1.70 per ton at the mines, plus a transportation charge of about \$2.70 per ton. Early in 1917, when the supply on hand ran low it became necessary to pay a much higher rate. The coal now being used is costing \$5.75 at the mines, or \$8.45 per ton delivered. In the year ended June 30, 1917, 8,762 tons were used, at a total cost of \$52,526.09, or an average of about \$5.99 per ton. At the price now paid — and practically the entire supply for the year has been bought or contracted for on this basis — the increased charge for fuel in the year ending June 30, 1918, as compared with the year ended June 30, 1917, will be about \$21,500 without allowing for increase in consumption.

The situation with respect to other materials and supplies is similar. Early in 1916 the company anticipated the rise in the market and purchased a comparatively large stock which enabled it to escape the burden of advanced prices for some time. The management estimates that, if current prices had been paid for materials used in repairs and renewals during the year ended June 30, 1917, the cost would have been nearly \$13,000 greater. Evidence was also introduced in regard to other items of expense which are likely to increase. There is much that is speculative about such estimates, but the fact that prices have reached an abnormally high level is certain, and there seems little reason to anticipate any marked recession so long as the war continues, and probably for some time afterwards. The company may reasonably expect in the immediate future, in our judgment, an increase in operating expense, as compared with the year ended June 30, 1917, of at least \$35,000 per year and probably a greater sum,

due to increased prices of fuel and other supplies without allowing for any greater use. There are other items of expense which are likely also to increase.

These anticipations are more than confirmed by the actual operating statistics for the eleven months ended November 30, 1917. These statistics indicate a probable net operating revenue for the calendar year of about \$154,000, a decrease of about \$66,000 from the net operating revenue for the year ended June 30, 1917, if allowance is made for the arbitration expense included in that year's figures. In part this decrease is due to somewhat more extensive maintenance work, but it is chiefly due to increase in the items of expense which have just been mentioned.

Until very recently, the company set aside out of earnings no reserve for depreciation, and the total accumulation for this purpose amounted, on June 30, 1917, to the comparatively small sum of \$72,194.14. The policy of the past was merely to maintain the property in good condition, charging occasional additions and improvements to operating expense in the more prosperous years. The claim is now advanced by the management that this policy was wrong in principle, and expert testimony was offered to prove that far greater provision for depreciation ought to be made. In determining the necessary appropriation, the lives of the various classes of depreciable property were estimated as follows:—

	Years.
Rolling stock and equipment,	20
Track and electric line construction,	16 $\frac{2}{3}$
Buildings,	33 $\frac{1}{3}$
Power plant and equipment,	25
Park property, exclusive of land,	20

This made the composite life of all depreciable property about 21.75 years. From these life estimates the amount which ought to have been expended or set aside in the year ended June 30, 1916, was determined. For example, 5 per cent of investment was used for rolling stock, based on a 20-year life, and 6 per cent of investment for track and roadway, based on a 16 $\frac{2}{3}$ -year life. The total amount thus determined was placed at \$144,501.05. The maintenance expenditures were then analyzed to ascertain the portion used for renewals which might properly have been charged against a depreciation fund and this sum, together with the small amount actually set aside for depreciation in the year,

was deducted from the figure just given to determine the depreciation not provided for. This was found to be approximately \$100,000.

This method of ascertaining depreciation requirements is similar to that which was employed in the Bay State rate case. In that case a much more detailed and refined analysis was made, but the general results were not widely different, for the composite life of the depreciable property was placed at 22.69 years. The subject is one of great difficulty. Volumes have been written upon depreciation, but theories and practices differ so widely that much confusion exists, a confusion which is increased when the property is not new. Most items of street railway property begin to depreciate from the time when they are acquired and must eventually be replaced, either because they are worn out or are inadequate to meet increased demands, or because they are obsolete. Good management will prepare for these contingencies, so that the property may always be maintained in first-class condition, able to furnish adequate, economical and reasonably modern service. When a company takes the necessary steps to pay for such replacements out of earnings, it provides for depreciation. The practical purpose of a depreciation reserve fund is merely to distribute and equalize the burden and to prevent too severe a drain upon the earnings of any one year.

The fact that the Holyoke company has not made adequate provision for depreciation in the past is indicated by the present condition of the property. Rolling stock and equipment offer, perhaps, the best illustration. The company places the average efficient life of cars at 20 years. On this basis, 38 out of 139 of the existing cars ought to be replaced at once, and 93 out of 139, or about two-thirds, within the next five years. Inspection indicates that this result is reasonably accurate, for while these cars in most instances are not worn out, they are inefficient, judged by modern standards, and ought to be replaced in the interests of good service and economical operation. A somewhat similar situation exists in the case of power plant and equipment and car house buildings. The original power plant at Holyoke, built in 1895 and enlarged a few years later, the Amherst power station, built in 1907, the original car house in Holyoke and the car house at Sunderland have all been in whole or in part abandoned and replaced by new property. In these cases, however, much of the replacement expense was capitalized, and

abandoned property costing over \$100,000 was not charged off, as it would have been if a proper depreciation fund had been accumulated. In the case of track and line, certain renewals, as already indicated, are now overdue and, during at least the next five years, the renewals which will be necessary will be greater than normal. No depreciation fund exists to cover this increase in current expense. If the company is right in its estimate of the life of track and line, 6 per cent ought to be renewed, on the average, each year, or about 12 miles annually. In contrast with this, the inspection department reports that, from 1910 to 1917 inclusive, only 10.2 miles of rail were renewed, or about 1.3 miles per year. While this does not include cases where ties were renewed and not rail, and while the company's estimate of the life of track and line may be, and probably is, low, there is good evidence that more work must be done on this portion of the property in the near future than has been customary in recent years.

In determining the provision which ought to be made for depreciation, the general method employed by the company is sound. The estimates of lives of various classes of property have, of course, no mathematical certainty; past experience and prevailing opinions among street railway men are reasonably trustworthy guides, but changes in the art may at any time upset calculations. Estimates must, however, be made, for there is no doubt about the fact of depreciation and it ought to be provided for in some systematic way. It has been urged by certain experts that no depreciation reserve is necessary in the case of a large street railway system which is not new and which has been gradually built up over a period of years, since renewals tend to strike a yearly average if they are made regularly and seasonably. This is probably true of certain classes of property, and perhaps of all the property of a very large system, but we doubt whether it is true of much of the property of a company like the one now under consideration. But even if it were true, the same calculations would be necessary as a check upon yearly expenditures. Indeed, companies make a serious mistake if they do not segregate depreciation renewals from ordinary maintenance repairs and lay down some definite rule for caring for depreciation, failure to follow which will at once be apparent. Under ordinary methods of management and accounting, decreased earnings are often compensated for by deferring or neglecting renewals, and little indication of the fact appears upon the face of public

records, so that stockholders and investors are misled as to the real financial condition.

Conceding, then, that the company has used a proper method in determining depreciation requirements, there is yet doubt whether the result obtained may be accepted as correct. Upon present evidence it seems to the Commission that the lives assigned to certain classes of property are low, especially track and line construction and some of the buildings; it is not clear that a careful enough segregation has been made as between depreciable and non-depreciable property, or that sufficient allowance has been made for ultimate scrap values; nor does the analysis of maintenance expenditures appear to have been very thorough. The estimate has also been made up wholly on the "straight line" basis. Allowing for all elements of doubt, however, it is safe to say that the additional amount which ought to have been expended or set aside in the year ended June 30, 1917, for current depreciation was at least not less than \$50,000.

Besides current depreciation, provision ought sooner or later to be made for depreciation which has accrued in the past, if the property is to be placed in first-class modern operating condition. Precisely what this would involve it is difficult to determine from data now at hand. It calls for a detailed engineering and operating survey of the system which it has not been practicable for the Commission to undertake with the limited time and assistance at its command. For present purposes, however, it will be sufficient to estimate requirements roughly, assuming a period of about 5 years for the process of rehabilitation.

On the basis of the company's life estimate, two-thirds of the cars ought to be replaced during the period. Reducing this estimate to one-half, the requirements would be about \$338,000, or \$67,600 per year. In the case of track and line the inspection department, as shown above, has estimated the yearly requirements at \$77,600. During the year ended June 30, 1917, the total expenditures for maintenance of way and structures amounted to \$63,872, and at least \$24,458 of this sum represented superintendence, cleaning and sanding track, removing snow and ice and minor repairs, leaving not more than \$39,400 for expenditures comparable to those estimated by the inspection department. The additional amount required would thus be not less than \$38,200 per year. In the case of power plant and car house property, the company now has, for the most part, new and modern equipment. Abandoned property with a book value

of at least \$100,000, however, ought to be charged off, and this would mean \$20,000 per year in the five-year period. A rough estimate of the requirements is, therefore,

	Per Year.
Rolling stock and equipment,	\$67,600
Track and line,	38,200
Power plant and car houses,	20,000
	<hr/>
	\$125,800

Some of these estimated expenditures may be classed as current rather than past uncared-for depreciation, but, allowing for this, \$100,000 per year is a conservative estimate of the needs if the property were to be placed in first-class, modern operating condition within the period of time indicated.

Summing up the above discussion, it appears that the company may reasonably expect, as compared with the year ended June 30, 1917, an additional burden of at least \$35,000 per year, and probably twice that amount, for increased operating expense; that it should plan to set aside each year at least \$50,000 additional for current depreciation; and that it should, if the property is to be placed in the most desirable condition, appropriate from earnings for rehabilitation purposes at least \$100,000 annually during the next five years. The total for additional expense and current depreciation, without allowing for rehabilitation, on this basis would be somewhere between \$85,000 and \$125,000 per year. Including rehabilitation, it would be somewhere between \$185,000 and \$225,000. How, then, should this burden be borne?

In the Middlesex and Boston rate case the Commission had the following to say with reference to depreciation and the provision made for it in the past (2 P. S. C. Rep., p. 138):—

Counsel for certain remonstrants have suggested, not with great apparent confidence, that the payment of even the moderate dividends paid by this company, without taking care of depreciation, is mismanagement seriously affecting the right to a fair rate. But there is a great practical difference between the payment of dividends averaging 4.35 per cent, no more, perhaps even less, than an investment rate on money (which tends to keep the corporation in some sort of credit), and the payment of dividends in excess of an investment rate which would tend to put the stock of the company on a speculative basis. The payment of large dividends, in substantial excess of an investment return upon money, without proper care of depreciation, would be clearly gross mismanage-

ment calling for condemnation and perhaps substantially affecting even a rate case. But in the present case, dealing with the right of this corporation to have a living wage for its capital, the fact that the stockholders have hitherto received small dividends, makes no material difference in the claim of the corporation for an increased rate. But we make it very plain that the payment of dividends in excess of an investment rate, without caring for depreciation and all other proper operating charges, would be mismanagement requiring the Commission's effective condemnation.

In the Blue Hill rate case, the following comment was made (3 P. S. C. Rep., p. 75): —

The ruling of the Commission in the Middlesex and Boston case was accompanied by the express stipulation "that if there is mismanagement causing loss, such loss must be charged against the stockholders legally responsible for the mismanagement." In other words, the company is held to the same standard of honesty and prudence in the management and maintenance as in the original acquisition of its properties. It must, so far at least as it reasonably can, keep its investment good. If through some fault of its own it has failed to make due provision for depreciation, it cannot reasonably expect the public to pay a return upon that portion of the investment which it has neglected to preserve. But under a consistent application of the investment theory, it would seem in general that deduction should be made for the depreciation which comes from age and use in so far only as the failure to make provision for it is due to the payment of unwarranted dividends or is otherwise attributable to mismanagement.

In the present instance stockholders in the past have almost uniformly had good returns. Eight per cent dividends were paid regularly until very recently and, even if premiums are taken into consideration, the return has been more than 6 per cent and was, when dividend payments were made, in excess of the "investment rate on money" which the Commission had in mind in the Middlesex and Boston case. It also appears that the management was not uninformed upon the subject of depreciation, for the engineer, Mr. George E. Pellissier, who appeared for the company in the recent hearings, testified that at least 14 years ago he reported to the management that, in his judgment, the expenditures which were being made for maintenance provided only for what he termed "visible depreciation" and did not provide for the "invisible depreciation," accruing from such factors as obsolescence and inadequacy.

It is also true that the company's financial condition has in some degree been impaired by what appear to have been ill-

considered investments in the Hampshire and Amherst and Sunderland roads and by the construction of the Westfield line. On the other hand, there are offsetting circumstances. In the past there is reason to believe that some additions and improvements were paid for from operating expense, and the public has since had the benefit without an increase in capital charge. The company, also, has on the whole given good service and maintained its property, as street railway properties go, in very fair condition. The stock is very largely in the hands of small investors and has been issued at a price as high, in two instances, as \$150 per share. In the market it has commanded even higher prices. While the customary dividend rate in the past has been 8 per cent, in 1916 it was 6 per cent and last year but $4\frac{1}{2}$ per cent.

Taking all circumstances into consideration, it seems to the Commission that, while the stockholders have already been called upon for a sacrifice and ought, in justice, to be able to look forward to a day in the not remote future when dividends will be restored to the normal rate, they ought not to expect for the present a rate higher at the maximum than 6 per cent. This would mean substantially less than 6 per cent upon the entire investment. In determining what action is now just and reasonable, it is also proper that the Commission should give weight to the following considerations: —

(1) The burden of high prices from which the company is suffering is a burden, caused by the war, which is falling with equal weight on most individuals in the community. It is not a time when maximum returns ought reasonably to be expected.

(2) Present prices of fuel and materials are clearly abnormal and it ought not to be assumed that they will continue indefinitely. It is reasonable to suppose that relief will come soon after the war ends, and it is possible that it may come sooner through governmental regulation. So long as these excessive prices continue, it would be unwise to establish a scale of fares for the purpose of making a provision now for past and future depreciation which is theoretically sound but far in excess of any provision which this company and street railway companies generally have in the past been in the practice of making.

(3) Under present abnormal conditions it is doubtful whether any extensive process of rehabilitation could be or ought to be undertaken. Even if funds could be obtained, the necessary construction materials and equipment could be secured, if at all, with great difficulty and only at excessive prices.

(4) While the rehabilitation suggested is desirable, the property is in sufficiently good condition to furnish service of fair quality without it.

Under all the conditions, it seems to the Commission that it would be just and reasonable at the present time to establish a new scale of fares estimated to produce about \$110,000 in additional revenue per year. As a general rule it is the experience of street railway companies that the actual results from increases in fares fall below previous estimates. If \$110,000 were obtained, however, it would enable the company, unless conditions change for the worse, to meet increased expenses, to pay dividends at a moderate rate, and to make a substantial provision for depreciation.

If this course is followed, however, provision should be made for reopening the case at the end of one year's time, so that further adjustments, up or down, may be made, if deemed desirable, in the light of conditions then existing and the experience and information then available. There are now many uncertain factors, and for this reason the Commission has not attempted to reach final or precise conclusions. No one can accurately foretell the results which may come from any advance in rates, and street railway managers are themselves in doubt as to the best method of increasing revenue. Several methods are now on trial in the commonwealth. The future course of prices, of wages and of traffic are just as uncertain, and it is also possible that new legislation during the year may in some measure modify the situation. Furthermore, an engineering and operating survey of the property, as has already been suggested, is very desirable and ought to be made by the company. By this means full information should be furnished as to the ages of all important items of existing property, as to renewals which have been provided for in recent years through the maintenance account, as to the economies which are likely to result from changes in rolling stock, track, line and shops, as to methods of track construction, as to the use of power by motormen, as to the routing of cars, the question of lay-overs and scheduled speed and operating economies in general, and as to the development of trolley freight and express service, in which this company has made little progress.

Before considering the various suggested plans for raising fares a word should be said as to the earnings of the various operating routes. In the year ended June 30, 1916, the statistics were as follows: —

ROUTE.	Receipts per Car Mile (Cents).	Receipts for Car Hour.	Car Miles per Car Hour.
Mount Park Highlands to City Hall, . . .	30.43	\$2 73	8.98
South Hadley Falls to City Hall, . . .	43.35	2 56	5.90
Elmwood to City Hall,	42.05	3 32	7.90
South Hadley to City Hall,	28.67	2 54	8.85
Oakdale to City Hall,	24.79	1 99	8.03
Fairview to City Hall,	25.73	1 85	7.19
Springfield to City Hall,	41.62	4 37	10.50
Chicopee Falls to City Hall,	37.47	3 37	9.00
Westfield to City Hall,	18.00	2 20	12.25
Chicopee to City Hall,	32.59	3 20	9.81
Mount Tom Junction to City Hall, . . .	21.78	2 69	12.37
North Pleasant Street to City Hall, . . .	20.95	1 46	6.98
Hampshire (South Hadley to Notch), . .	10.66	2 00	18.78
Amherst and Sunderland,	12.79	1 55	12.12

	Per Car Mile (Cents).	Per Car Hour.
Average operating expense,	20.11	\$1 96
Average operating expense and fixed charges,	25.51	2 48

Operating expenses are not kept separately for these routes, except in the case of the Amherst and Sunderland division, but from the above statistics, which are based merely on cash passenger receipts, it is possible to determine with approximate accuracy the relative earning power. The tendency is to an operating expense per car mile lower than the average on the routes where the speed is greater and more car miles are operated in each car hour. It will be seen that the best paying lines are those which operate to Springfield, South Hadley Falls, Elmwood and Chicopee Falls. The worst routes are the Amherst and Sunderland and the Hampshire, which constitute the Amherst and Sunderland division. The operating results on this division for the past three calendar years were as follows: —

YEAR ENDED —	Revenue.	Operating Expense.	Balance.
Dec. 31, 1914,	\$67,273 44	\$56,128 57	\$11,144 87
Dec. 31, 1915,	55,851 32	53,444 98	2,406 34
Dec. 31, 1916,	59,270 46	54,972 73	4,297 73

The larger revenue in 1914 was due chiefly to freight and express receipts, which have fallen off sharply in the past two years. It will be seen that the division yields little or no profit. A reduction in car mileage during the current year has tended to reduce expense, but this no more than compensates for mounting costs.

Three methods of increasing fares have been suggested by the company. Two are similar and are based upon an application of the so-called "zone system". They preserve the 5-cent fare within the thickly-settled central district of Holyoke, but reduce the distances which may be traveled, thus creating an outer zone to and from which an extra fare is charged. The third method is based upon the substitution of a 6-cent fare for the present 5-cent fare. All three provide for a 7-cent fare on the Amherst and Sunderland division, where the unit is now 6 cents. More specifically the plans are as follows: —

PLAN I.

Under this plan, an "inner circle" is created within the present 5-cent fare territory, the limits being fixed at varying distances on the lines radiating from City Hall. The following table shows these distances, measured from City Hall, and also, in the cases where the lines extend beyond this "inner circle", the limits of the so-called "outer circle": —

<i>Inner Circle.</i>	<i>Miles.</i>	<i>Outer Circle.</i>	<i>Miles.</i>
Mountain Park,	3.70	Mount Tom Junction, . .	7.47
Oakdale,	2.97	Westfield town line, . .	6.70
Highlands,	2.80		
Newton Smith's,	2.30	South Hadley Center, . .	4.46
Willimansett,	2.20	Chicopee Street,	5.00
		Chicopee Falls,	4.60
Springdale,	2.00	West Springfield town line, .	3.80
Elmwood,	2.00	Fairview,	3.36
South Hadley town line, .	1.89		
North Pleasant Street, .	1.68		
South Hadley Falls, . . .	1.37		

The Oakdale limit is at Cherry street and Jarvis avenue, the Willimansett limit at Meadow and Chicopee streets, the Springdale limit at Prew avenue, and the South Hadley Falls limit at North Main street. The "inner circle" includes the thickly-settled portion of Holyoke and also the villages of South Hadley Falls and Willimansett (a part of the city of Chicopee) just across

the Connecticut river. In no case is the limit of the "inner circle" placed at a point within the congested territory, unless the line terminates within that territory.

It is proposed, under this plan, to charge 5 cents between all points within the "inner circle" and between points in the "outer circle" which are located on the same line; to charge 10 cents between any point in the "inner circle" and any point in the "outer circle"; and to charge 15 cents between points in the "outer circle" which are located on different lines. Tickets would be sold at the rate of 4 for 30 cents, or $7\frac{1}{2}$ cents each, good between South Hadley Center, Fairview, Chicopee street, Chicopee Falls or the West Springfield town line and the City Hall in Holyoke. A charge of 1 cent would be made for each transfer, but this penny would be redeemed if the transfer were presented within the indicated time limit. No transfers would be issued in connection with the $7\frac{1}{2}$ -cent tickets.

The company estimates that this change in fares would yield about \$145,000 increase in revenue annually. This estimate was based on test traffic counts and allowed for probable decreases of from 10 per cent to 25 per cent in through riding, due to the advance in rates. The largest decreases were estimated on the lines which are competitive with the Boston and Maine railroad between Springfield and Northampton.

PLAN II.

This plan makes provision for the same "inner" and "outer" circles, but with a somewhat different scheme of charging. Instead of providing for the sale of $7\frac{1}{2}$ -cent tickets good between City Hall and the points above mentioned, it substitutes a 7-cent cash fare with transfer privileges at City Hall, except that no transfers would be given from the South Hadley Center, Chicopee, Chicopee Falls or West Springfield routes to or from Mountain Park. In all cases, both for through rides and for rides within the "inner circle", one cent would be charged for transfers, without redemption. Between Fairview and Chicopee street or Chicopee Falls, special tickets would be sold, making the fare 10 cents instead of 15 cents. The following table shows the maximum distances which could be covered for various fares under this and the previous plan: —

	Plan I.	Plan II.
	Miles.	Miles.
For 5 cents, inner circle,	6.67	3.70
For 5 cents, outer circle,	3.77	3.77
For 6 cents, inner circle,	—	6.67
For 7 cents, inner and outer circles,	—	5.00
For 7½ cents, inner and outer circles,	5.00	—
For 8 cents, inner and outer circles,	—	7.97
For 10 cents, inner and outer circles,	10.44	7.47
For 11 cents, inner and outer circles,	—	10.44

The company estimates that the probable increase in revenue from Plan II would be about \$132,000 annually, the estimate being prepared on the same basis as for Plan I.

PLAN III.

Under this plan, a 6-cent fare would be substituted for the present 5-cent fare and no change would be made in existing fare limits, except on the lines running to the Westfield town line and to Mount Tom Junction. In the one case an additional fare limit would be placed at Oakdale (Cherry and Jarvis streets), and in the other, at Mountain Park. A charge of 2 cents would also be made for all transfers issued at City Hall to and from points in the "outer circle". No estimate was prepared of the probable increase in revenue from this plan. Assuming no loss of traffic, the increase to 6 cents would alone provide for \$140,000, to which would be added the gain from the additional fare zones on the Northampton and Westfield lines and from the charge for transfers. Judging from the experience of other companies there would, in all probability, be a substantial decrease in traffic.

At the hearings the company expressed a preference for a "zone system" of charging which would retain the 5-cent unit within the thickly-settled central district, but did not urge this preference strongly. On the other hand, the communities represented were in general of the opinion that, if the Commission should find that some increase in charges was justified, the adoption of a 6-cent unit without change in fare limits — perhaps coupled with the sale of tickets at a lower rate — would be preferable to any "zone system" that might be devised. In reaching a decision, however, the Commission must be guided in the final analysis, not by mere expressions of preference on the part of

either the company or the communities, but by its best judgment, after considering the evidence, as to the plan which, taken as a whole, will produce the best results for all concerned. It is also true that it is difficult in a matter like this to gauge public sentiment accurately in advance of actual trial.

Experience so far in this commonwealth with a 6-cent unit on city lines has not been especially encouraging. It is an awkward fare, hard to collect, either with the old register system or with the prepayment fare box, and in the latter case lends itself readily to fraud. It has a further and perhaps more serious disadvantage that it discourages short-haul riding and encourages jitney competition. There is an undercurrent of feeling in street railway circles in favor of maintaining a maximum fare of 5 cents in compact metropolitan centers. Short-haul riding is the most profitable that a street railway company can secure and the best minds in the industry are now at work on the problem of attracting and holding this kind of traffic.

The point is well illustrated in the present case. In a city like Holyoke, where a number of lines radiate from a common center, the opportunities for securing short-haul traffic are at a maximum. Using, by way of example, the lines which extend to Elmwood, North Pleasant street and South Hadley Falls, none of them is more than 2 miles in length, and in one case the distance is less than a mile and a half. A 6-cent fare on such lines would, in all probability, lead many persons to walk who now ride and open up an inviting field for jitney competition at a 5-cent rate. It is on such short city routes that jitney operation has proven most profitable. On the other hand, if a 5-cent fare can be preserved on such lines and a regular and frequent service provided, doubling up present service by the introduction of one-man cars if necessary, the opportunities for attracting traffic are great.

There is equity, also, in keeping a 5-cent unit within the congested districts, for it is these districts which give strength to the system. More than two-thirds of the people served live in Holyoke and the adjacent settlements across the Connecticut River and they have really furnished the prosperity which the company has enjoyed in the past. It has been urged on grounds of social welfare that a "zone system" ought not to be introduced, the idea being that it will further congest the central districts and prevent families from living in more comfortable surroundings in the suburban territory. Certain observers, however, are of the opinion that the benefit of a low fare in suburban territory is received by the land owner rather than by the

tenant. In other words, where a low fare exists, land values and rents increase, while, if the fare is high, they remain at a low level. The net result, so far as the cost of maintaining a home is concerned, is much the same in either case, in the view of these observers, the difference being absorbed by real estate values.

It may further be observed that a "zone system" would provide a local fare of 5 cents not only in the "inner circle", but in the "outer circle" as well. The increased fare would be charged for the longer rides.

If a 6-cent fare were adopted and failed, for any of the reasons above suggested, to produce the desired financial result, the tendency would be toward a still higher unit or toward a "zone system" with 6 cents as the minimum fare. It is easier to increase the minimum than to reduce it. When a company is in need of additional revenue, it hesitates to try a lower rate and it is doubtful how far the Commission may have power to compel such a trial to be made. On the other hand, if the "zone system" were now adopted, with 5 cents as the minimum, it would be a comparatively simple matter, if results proved unfavorable, to change back to the present plan and try a uniform 6-cent unit. Methods of increasing street railway fares, as already indicated, are now admittedly in an experimental stage. Six-cent, seven-cent and eight-cent fares and the mileage system of charging are all on trial in Massachusetts on various roads at the present time. Without in any way committing itself finally to the method or establishing any precedent which must necessarily be followed in the disposition of other cases, it seems to the Commission that the so-called "zone system" of charging which permits city systems to increase fares without raising the 5-cent rate in the central district ought to be given a fair trial, and it also seems, upon present evidence, that it is a method which is especially well adapted to the Holyoke situation and likely to produce more generally satisfactory results for all concerned.

The general scheme for such a "zone system" which has been suggested by the company seems, on the whole, well devised. The limits of the "inner circle" include the compact, densely-settled central district and appear to have been logically located. Plan I and Plan II are very similar and either one may be used as a basis. Taking Plan I, however, in the judgment of the Commission the following modifications should be made: —

(1) Tickets good for rides between points in the "inner circle" and points in the "outer circle" located on the West Springfield, Chicopee

Falls, Chicopee street, Fairview and South Hadley Center lines should be freely sold, both at convenient outside agencies and on the cars, at the rate of 6 for 40 cents, equivalent to $6\frac{2}{3}$ cents per ride, and the fact that such tickets are available should be advertised by conspicuous notices in the cars. The purchase of such tickets will impose little, if any, hardship upon patrons who ride with any frequency and at the same time will greatly simplify fare collections by reducing the number of pennies to be handled. Those who ride very infrequently may prefer to pay the cash fare of 10 cents rather than to invest in tickets, but it is not unfair that riders of this class should be charged a higher rate.

(2) Provision should be made, either by the sale of tickets or otherwise, for a rate of $7\frac{1}{2}$ cents for local rides between points in the "inner circle" and Smith's Ferry or intermediate points on the Northampton line, and between points in the "inner circle" and the city boundary or intermediate points on the Westfield line. On the latter line the company may, if it chooses to do so, limit this local fare to the hours when working men are going to or returning from work.

(3) Lap-overs should be provided for the South Hadley Falls and Willimansett districts, so that passengers may ride between South Hadley Falls and South Hadley Center, and between Willimansett and other parts of the city of Chicopee, for a single 5-cent fare. This can, in our judgment, be done without great inconvenience to the company.

(4) Special tickets should be sold at the rate of 5 tickets for 50 cents, good between points on the Fairview line in the city of Chicopee and points on the Chicopee street and Chicopee Falls lines in the same city.

(5) Free transfers should be given at the City Hall to all points within the "inner circle", and these should be available to passengers using tickets as well as to passengers paying cash fares.

No change has been indicated above in the case of the 7-cent fares proposed on the Amherst & Sunderland division, for the operation of this division has not been profitable and the company is fairly entitled to additional revenue if it can be secured. The Commission, however, suggests that the company, in its own interest, might well consider the adoption of some plan, either by the sale of tickets or otherwise, whereby local rides could be secured for reasonable distances within the town limits of Amherst at a rate not in excess of 6 cents.

It is quite possible that the 7-cent fare on this division may not result in the anticipated improvement and the company should keep careful records so that its effect may be accurately determined, with a view to possible modifications in the future. This, indeed, should be done in the case of the plan as a whole. It should be regarded, as already indicated, not as a permanent solution of the fare question, but as tentative and experimental.

It should be clearly understood that the plan is subject to review at the end of a one-year period with a view to possible modifications in the light of experience gained during that period and in the light of the additional information which the company should in the meantime secure by the intensive study of the property and its operation which has been suggested. Subject to the above understanding, the company will be allowed to file a schedule embodying the new fare plan as above outlined and an order will be issued permitting this schedule to become effective on short notice. No order is at present entered as no definite schedule is before the Commission, and it has seemed best to defer the short-time order until the Commission is assured that the new schedule to be filed conforms to the views above indicated.

For the Commission,

DECEMBER 31, 1917. ANDREW A. HIGHLANDS,
[P. S. C. 1775] *Secretary.*

MEMORANDUM.

In the matter of the petition of the Mayor and Board of Aldermen of the city of Holyoke relative to transfers on the Holyoke Street railway, at a hearing given on this petition, the petitioners desired an extension of the transfer privileges. Since this hearing the company has filed a petition for authority to increase its rates of fare for passengers or decrease the present distance of travel on its lines, or both. Hearings have been held and the company and the remonstrants have been heard fully upon the matter. A decision upon the same has been made by the Commission under date of December 31, 1917, which covers all the points raised by the original petition, and the petition is therefore dismissed.

By the Commission,

DECEMBER 31, 1917. ANDREW A. HIGHLANDS,
[P. S. C. 1694] *Secretary.*

MIDDLESEX AND BOSTON FARES.

Notice of the Middlesex and Boston Street Railway Company relative to proposed increase in fares.

P. S. C. 1769.
DECIDED AUGUST 10, 1917.

ARTHUR A. BALLANTINE for Middlesex and Boston Street Railway Company.

ABRAHAM H. LINCOLN for Town of Ashland.

L. H. RABBITT }
A. S. FARWELL } for Ashland Board of Trade.

FRANCIS M. QUA for Town of Billerica.

F. H. HILTON for Town of Framingham.

J. J. PRINDIVILLE }
H. W. HARKRADER } for Framingham Board of Trade.

J. B. STEWART }
EDWARD CARR } for Town of Hopkinton.

A. I. BICKNELL for Town of Lexington.

WILLIAM C. STICKEL for Lexington Committee on Transportation.

WILLIAM J. NAPHEN }
THOMAS H. BRENNAN } for Town of Natick.

WILLIAM G. MOSELEY for Town of Needham.

E. B. BISHOP for City of Newton.

J. WESTON ALLEN }
HENRY H. BOND } for Newton Board of Trade and Waltham Chamber of Commerce.

M. W. CANNON for Nonantum Improvement Association of Newton.

EBEN J. WILLIAMS }
JOHN J. FLYNN }
JAMES R. GRIFFIN } for City of Waltham.

G. W. THORNBURG for Waltham Board of Trade.

J. MINCHIN }
J. W. HARRISON } for Wellington Grove Citizens' Association.

CLARENCE A. BUNKER for Town of Wellesley.

WILFORD D. GRAY for City of Woburn.

MEMORANDUM.

On July 3, 1914, the Middlesex and Boston Street Railway Company filed with the Commission notice of a proposed increase in fares. At that time the company was charging 5 cents, with an additional cent for every transfer, on all of its lines within Newton and Waltham, except those formerly owned by the Newton and Boston Street Railway Company. On the latter and on all its other lines, it was charging 6 cents, with free transfer privileges, selling 50-ride ticket-books for \$2.50, good west of Newton Lower Falls. In place of these fares it sought to charge 6 cents throughout the system, with an additional charge of 1 cent for every transfer issued.

The Commission's decision was rendered on October 28, 1914. After a thorough consideration of the company's history, investment, operation and management, the schedule desired was disapproved, but the company was permitted to cancel the 50-ride books and to raise the fare on its lines in Newton and Waltham from 5 cents to 6 cents, subject to the requirement that tickets good upon these lines should be sold at the rate of nine rides for 50 cents. In this connection the following extracts from the Commission's report are pertinent: —

. . . We are not prepared to say that in the light of the prior history of the petitioner this company is now entitled to a full return upon all its capital stock. On the other hand, we are of opinion that it is in the public interest that more money should be expended by the company in the maintenance and equipment of its property and that such fares should be approved as will, assuming rigid economy and wise management, ground reasonable hopes that the stock of this company may shortly become a safe and sound dividend-paying investment. (2d Rep. P. S. C., p. 144.)

Assuming that the communities served by this railway continue prosperous and thus increase its traffic, the Commission believes that the schedule approved, with rigid economy on the part of the company, — which will include as soon as practicable an attempt to obtain power on more advantageous terms than at present, — will enable the petitioner to obtain sufficient revenue to maintain its property in safe and sound condition, expending for maintenance and renewals, until some general basis for dealing with depreciation is ordered or indicated by this commission, substantially 20 per cent of its gross revenue, and also to provide for very moderate dividends. (2d Rep. P. S. C., p. 146.)

The company now seeks a further increase in fares. Notice to this effect was filed on May 24, 1917, in the form of a tariff

which was to become effective June 25 but was later suspended by the Commission until September 1. This tariff provided for a straight 7-cent fare, without the use of tickets, in Newton and Waltham, and for a similar 8-cent fare on the lines west of Newton Lower Falls and in the Lexington territory. It was estimated that these increases would yield about \$120,000 additional revenue yearly. In support of the new schedule the company stated that the increase allowed in 1914 had proved utterly inadequate from the beginning, and that recent large increases in wages and in prices of materials and supplies had made the need for additional income even more urgent. In the year ended June 30, 1915, dividends of 4 per cent were declared, in the succeeding year the rate fell to $3\frac{1}{4}$ per cent, while in the year ended June 30, 1917, but 1 per cent was paid. On May 1 of this year a decision was handed down by a board of arbitration granting substantial increases in wages to the employees. During the present year it is estimated that these increases will amount to about \$45,000 and, in the succeeding year, to about \$51,000. Evidence was also introduced to show that materials and supplies have recently increased in price 25, 50 and in some cases 100 per cent. In the year ended June 30, 1917, the road failed to earn fixed charges by \$2,434.89, while in the previous year the surplus was \$65,155.91.

Public hearings were held, beginning on June 11. At the close of the presentation of evidence it was suggested by certain counsel for remonstrants that an opportunity should be given by the Commission, prior to the final argument of the case, for conferences between the remonstrants and the company, looking toward a possible agreement in regard to the situation and the method of dealing with it. This suggestion was approved by the Commission, several conferences were held, and at the final hearing on July 26 the results were announced by J. Weston Allen, representing the Waltham Chamber of Commerce, the Newton Board of Trade and certain civic organizations. It appeared that a plan for an experimental increase in fares had been drafted, to which the company had at length assented and which the majority of the remonstrants either supported or did not oppose.

Under this plan the system would be divided roughly into sections, according to earning capacity. Where traffic is lightest the fare would be 8 cents and where it is heaviest, 6 cents. On sections of medium traffic it would be either a straight 7-cent

fare or 7 cents with the privilege of using tickets sold at the rate of 20 for \$1.20. In transferring from one line to another having the same or a lower rate of fare, free transfers would be issued, but in transferring to a line having a higher rate, 1 cent would be charged for the transfer. No transfers, however, would be issued to passengers paying fare by the use of tickets.

The lines where this plan would provide for a 6-cent unit are all located in Newton and Waltham. The lines where the cash fare would be 7 cents, but where tickets would be sold at the rate of 6 cents each, are as follows: —

- Lake street to Norumbega Park.
- Lake street to Newton Highlands.
- Watertown to Newton-Needham town line.
- Newtonville square to Newton Center.
- Main line, — Newton Lower Falls to Hopkinton.
- Branch line, — South Natick to Saxonville and Wayland.

The lines on which a straight 7-cent fare would be charged are as follows: —

- Waltham to Lexington.
- Arlington Heights to Lexington-Bedford town line.

The lines on which an 8-cent fare would be charged are the following: —

- Newton-Needham town line to Needham Junction.
- Needham square to Wellesley square.
- Hopkinton to Westborough.
- Lexington to Woburn.
- Lexington-Bedford town line to Concord and Billerica.

No opposition was voiced at the final hearing to this plan in its entirety, except by counsel for the towns of Natick and Billerica, but it was understood that Hopkinton was also opposed, and, perhaps, one or two other communities which had not taken part in the conferences. Counsel for Lexington was opposed, in part, upon the ground that the zone from Arlington Heights to Lexington should be given a 6-cent ticket, and counsel for Framingham made objection to a minor detail which the company has since arranged to correct. An essential feature of the plan, as agreed upon, was that it should be in force for a trial period of but six months, and that the question should be reopened at the end of this period without prejudice to any party. It was

estimated by the company that the plan might yield \$60,000 additional revenue yearly.

The remonstrants who favor this plan urge that its trial for the period indicated would throw light upon important questions which are in doubt to-day, and which cannot be wisely determined until the test of actual experience has been applied. If the plan were adopted, such a test would be secured in typical months of summer, fall and winter, both upon lines where competition exists and upon lines where this element is absent, so that, at the end of the six months, definite evidence would be available as to the actual results of both an 8-cent and a 7-cent fare. With this evidence it would be possible to determine, what may now only be conjectured, whether or not such fares are expedient from the standpoint of the company itself. The Commission and the community would also have the advantage of similar experiments which are now being made by other companies, with the so-called "copper zone" system and with other systems of charging.

After careful consideration it seems to the Commission that these arguments have much weight, and that there is, on the whole, public advantage in the adoption of such a plan as has been suggested. Even if the history and past operations of this company be viewed in the most unfavorable light, without doubt it is clearly entitled to additional income. Whether or not the units of fare which it now desires to introduce are either just or expedient is another matter. A company gains nothing from increasing its fares if it loses an equivalent amount of traffic, and, indeed, this company's own experience with the increase which it has already made has not, in this respect, been encouraging. The questions thus raised, however, are undoubtedly difficult of determination, and we think that the remonstrants who have devised the plan above outlined are right in the belief that the course which ought finally to be adopted, in the common interest of the community and the company, can more wisely be determined upon the basis of evidence obtained in actual experience. The unsettled general conditions caused by the war are a further reason for the adoption of temporary measures at the present time.

At best, it is not probable that the plan proposed will yield additional revenue which will more than compensate the company for the increase in wages and in prices of materials and supplies during the present year. Nor can it be said that the

division of the system into sections, according to earning capacity, has been made upon a basis which is unreasonable, at least for the purposes of a six months' trial. Without making, at the present time, any findings more definite than those which have already been indicated and leaving all questions open, without prejudice, for consideration at the end of the experimental period, the Commission is prepared to allow this plan, which represents at least a substantial consensus of opinion throughout the territory affected, to take effect. Under the law the Commission clearly has this power and may exercise it at its discretion. If the company, therefore, will cancel the schedule already filed and now under suspension, and will file with the Commission a new schedule embodying the agreement made with the majority of the remonstrants, as subsequently modified in minor particulars, together with definite notice that, by vote of the board of directors, the rates contained therein are offered for the purpose of an experimental trial for a period of six months and that, at the end of such time, the question of the continuance of these rates will be reopened without prejudice to any party with the same burden of proof upon the company as now exists, the Commission will allow this new schedule to become effective upon short notice, without suspension or further investigation.

For the Commission,

ANDREW A. HIGHLANDS,

Secretary.

MILFORD AND UXBRIDGE RATE CASE.

Notice of the Milford and Uxbridge Street Railway Company relative to increase in rates of fare.

P. S. C. 1763.

DECIDED AUGUST 9, 1917.

JOHN E. BENTON	}	for Milford and Uxbridge Street Railway Company.
WENDELL WILLIAMS		
WILLIAM P. KINGSBURY	}	for Town of Holliston.
A. L. FORBES		
JOHN C. LYNCH	}	for Town of Milford.
THOMAS J. NUGENT		
JOHN H. CUNNINGHAM		

REPORT.

On May 5, 1917, the Milford and Uxbridge Street Railway Company notified the Commission of an increase in passenger fares to take effect June 4, 1917. Briefly, it is proposed —

(1) *To make the unit cash fare 6 cents upon all owned lines.* — The present rate is 5 cents.

(2) *To withdraw existing reduced rate tickets upon all owned lines and to substitute workingmen's tickets in strips of 20 for \$1.00, good in lieu of a cash fare from 5 to 8 A.M. and from 4 to 7 P.M. in all zones.* — At present, tickets good at any time for local rides between Highland street in Holliston and Framingham depot, or intermediate points, are sold at the rate of 15 for \$1.00. Special workingmen's tickets are also sold in strips of 13 for \$1.00, good from 5 to 8 A.M. and from 4 to 7 P.M. on the following routes: —

(a) Lincoln square, Milford, and corner of Washington and Concord streets, East Holliston.

(b) Lincoln square, Milford, and end of line, Hopkinton.

(c) Lincoln square, Milford, and Medway post office.

(d) Hopedale post office and Douglas street, Uxbridge.

The present cash fare for the entire distance is 10 cents in all of these cases, and this is also the cash fare between Holliston and Framingham depot.

Under successive orders dated May 25, 1917, and July 31, 1917, the Commission suspended the operation of the new sched-

ule until August 10, 1917. A public hearing was given on June 7, 1917.

The main line of the Milford and Uxbridge is about 20 miles long and runs from Framingham depot through Holliston, Milford and Hopedale to Uxbridge. A branch extends from Milford to Medway and another from Milford to Hopkinton, the distances being about $7\frac{1}{2}$ and $6\frac{1}{2}$ miles. The total owned mileage, computed as single track, is 35.52 miles. Between Framingham and Milford the road is paralleled by a line of the Boston and Albany railroad, and between Milford and Hopkinton by a line of the New York, New Haven and Hartford. The territory in general is not thickly settled, Framingham and Milford being the largest towns, with populations in 1915 of 15,860 and 13,684, respectively. The Milford and Uxbridge also operates, under lease, the line of the Medway and Dedham Street Railway Company, about 20 miles long, and provides the cars, crews and power for electric passenger operation upon the line of the Grafton and Upton Railroad Company, about 15 miles long and extending from Milford through Hopedale and Upton to North Grafton. No increase in rates is proposed upon either of these lines. The present unit of fare upon both is 5 cents, but the zones are short, so that the average rate is in the neighborhood of 2 cents a mile.

The first road in this territory was built by the Milford and Hopedale Street Railway Company, about 1891, and was operated by the storage battery system. The company became involved in litigation, and operation was suspended until a controlling interest in the stock was acquired in 1896 by the promoters of the Milford, Holliston and Framingham Street Railway Company. At that time all the property had been sold to meet debts except track and franchises. The new owners levied a 100 per cent assessment upon the stock — \$60,000 in all — for reconstruction purposes, and wrote off the old property accounts, so that the Milford and Hopedale began business again without debt, with no larger amount of stock outstanding than represented new capital paid in, and with no larger property accounts than represented the cost of reconstruction and re-equipment. In 1897, the Milford, Holliston and Framingham, which had just begun operation, and the Milford and Hopedale were consolidated upon a share for share basis with the approval of the Board of Railroad Commissioners.

The original property of the Milford, Holliston and Framingham included the main line from Milford to Framingham and

the branch from Milford to Medway. In 1900, the property changed hands and the owners organized a new company, called the Milford and Uxbridge Street Railway Company, to construct a line from Hopedale to Uxbridge, the project including the establishment of a pleasure park in the town of Mendon. At about the same time the Milford, Holliston and Framingham company began the construction of the branch from Milford to Hopkinton. Upon July 3, 1902, the Board of Railroad Commissioners approved the consolidation of the two properties upon a share for share basis.

The outstanding capitalization of the Milford and Uxbridge Street Railway Company in stock, bonds and notes on December 31, 1916, was as follows: —

Common stock,	. . . . .	\$440,000
Preferred stock,	. . . . .	100,000
Mortgage bonds,	. . . . .	500,000
Notes payable,	. . . . .	53,500
		<hr/>
Total,	. . . . .	\$1,093,500

It appears that all the stock and all the bonds were issued under the supervision and with the approval of this Commission or its predecessor, the Board of Railroad Commissioners, except the \$60,000 stock originally issued by the Milford and Hopedale. The assessment upon this stock in 1896 and subsequent appraisals made for the board, however, established the validity of the investment represented thereby. It also appears that the stockholders of the Milford, Holliston and Framingham in 1898 made a contribution into the treasury of \$50,000, for which they received no securities or notes, and that the property accounts were written down at the same time by an equal amount. It further appears that stock amounting at par to \$43,000 was issued by the same company in 1900 at \$115, resulting in the payment into the treasury of a premium of \$6,300. On December 31, 1916, the permanent property investment amounted to \$32,449 per mile of single main track, which cannot be considered an unreasonable amount. According to the statement of the company, about two-thirds, at least, of the floating indebtedness of \$53,500 represents additions and improvements to the property which may properly be capitalized permanently, and the remainder represents expenditures for replacements or renewals which must ultimately be charged off to the operating account.

The fares charged upon the system have been the subject of modification from time to time, owing partly to recommendations of the Board of Railroad Commissioners and partly to the competition of the Boston and Albany railroad. In 1903, the board recommended that tickets be issued, so that workmen might ride for 5 cents within the limits of the town of Milford in cases where the fare would otherwise be 10 cents, and upon further recommendation in 1907 this privilege was extended, by the use of free transfers instead of tickets, to all passengers. In 1906, upon petition of the selectmen of Holliston, the board recommended "a rearrangement of fares which will secure a proportionate distribution of charges and recognize the right of patrons who ride daily at fixed hours between their homes and places of business to transportation at the lowest prices." This seems to have been the origin of certain of the existing workmen's tickets.

In the meantime the road had been faced by serious competition from the Boston and Albany. The original street railway fare between Milford and Framingham was 15 cents, 10 cents being charged between Milford and Holliston and 5 cents between Holliston and Framingham. The railroad fare was then 27 cents between Milford and Framingham and 13 cents between Holliston and Framingham. In 1902 or 1903, the Boston and Albany began to compete for the passenger traffic by operating more frequent trains and reducing the fare between Milford and Framingham from 27 cents to 10 cents. For a time the street railway endeavored to meet this competition by a similar reduction, but the original fare of 15 cents was restored in 1906. The reduction, so long as it was in effect, was accomplished by making the fare between Milford and Holliston 5 cents instead of 10 cents. In 1910 the railroad raised the fare between Holliston and Framingham to 10 cents and the Milford and Uxbridge followed suit. As this meant a 100 per cent increase in a rate which had been in effect for more than 12 years, it resulted in a vigorous protest from the people of Holliston and in a petition to the Board of Railroad Commissioners. The board found that "the existing unit of fare for a single ride is not unreasonable," but recommended that "some concession should be made with respect to the workmen's ticket, so-called." Pursuant to this recommendation the company issued special tickets at the rate of 15 for \$1.00, good during certain hours of the day between Highland street in Holliston and Framingham depot. Upon

further petition of the citizens of Holliston, however, the board made the following recommendation in 1913:—

The Board therefore recommends that during the next financial year, beginning July 1, 1913, the company, while maintaining the present rate of fare for through travel between Milford and South Framingham, as well as the existing unit of fare for a single ride upon all portions of the company's line, shall furnish special tickets at the rate of fifteen rides for one dollar, which shall be available to all persons for local travel in both directions between all points on the company's line north of Highland street in Holliston, and South Framingham. At the expiration of this experimental period the case may be reopened for such revision of the rates of fare or readjustment of the fare limits as may seem proper after a study of the revenues of the company.

No request for a reconsideration of this determination has been made by the company until the present time.

The dividend record upon common stock, since the organization of the Milford, Holliston and Framingham, has been as follows:—

Milford, Holliston and Framingham.

YEAR ENDED —	Rate (Per Cent).	YEAR ENDED —	Rate (Per Cent).
September 30, 1896 (4 months), .	4	September 30, 1900, . . .	8
September 30, 1897, . . .	5	September 30, 1901, . . .	7
September 30, 1898, . . .	—	July 10, 1902 (9 months), . .	6
September 30, 1899, . . .	8		

Milford and Uxbridge.

YEAR ENDED —	Rate (Per Cent).	YEAR ENDED —	Rate (Per Cent).
September 30, 1902 (9 months), .	1½	June 30, 1910 (9 months), . .	—
September 30, 1903, . . .	4½	June 30, 1911,	6
September 30, 1904, . . .	1½	June 30, 1912,	5
September 30, 1905, . . .	—	June 30, 1913,	5
September 30, 1906, . . .	—	June 30, 1914,	5
September 30, 1907, . . .	3½	June 30, 1915,	5
September 30, 1908, . . .	1	June 30, 1916,	5
September 30, 1909, . . .	3		

Regular dividends of 6 per cent have been paid upon the preferred stock since 1912. It will be noted that the dividend rate

upon common stock during the past 6 years has uniformly been 5 per cent. Dividends at this annual rate were declared in the 6 months ended December 31, 1916, but in the 6 months ended June 30, 1917, the dividend was passed. On December 31, 1916, the corporate surplus of the company amounted to but \$17,968.

Mention should be made of the fact that, in one respect, the table given above does not fully indicate the return received by the stockholders. It appears that in 1907 a company known as the Milford Investment Company was organized by stockholders of the railway company and took over the larger part of its floating indebtedness. The debt of the Milford and Uxbridge to this investment company varied from \$175,000 on September 30, 1907, to \$199,000 on March 1, 1910, and was finally paid off by the issue of preferred stock, the last payment being made in September, 1911. During the greater portion of the period the rate of interest paid to the investment company was 9 per cent. The rest of the time it was 7 per cent. It is evident, therefore, that, through their interest in the company, stockholders of the Milford and Uxbridge were able to secure, for a period of about three years, a return in excess of normal interest rates on relatively large sums of money loaned.

The net income of the company during the past ten years has been as follows: —

YEAR ENDED —	Net Income.	Per Cent on Capital Stock.
September 30, 1905,	\$10,585	2.41
September 30, 1906,	13,681	3.11
September 30, 1907,	17,648	4.01
September 30, 1908,	4,605	1.05
September 30, 1909,	14,157	3.22
June 30, 1910 (9 months),	2,853	.87
June 30, 1911,	30,002	5.55
June 30, 1912,	29,219	5.41
June 30, 1913,	29,470	5.45
June 30, 1914,	28,978	5.36
June 30, 1915,	25,810	4.78
June 30, 1916,	28,102	5.20
December 31, 1916 (12 months),	28,811	5.35

The per cent of return in the above table is figured on the total par value of outstanding stock, including both common and pre-

ferred. It will be noted that the net income in the past six years had varied very little and that at the end of the last calendar year, on the face of the returns, no reason existed for an increase in rates that had not existed, often in greater degree, in previous years. The company's claim for an increase at the present time, therefore, rests upon the following two claims: —

(1) That earnings have never been and are not now sufficient to provide adequately for depreciation and yield a fair return on the investment.

(2) That certain conditions, the effect of which was not felt in 1916 but is now beginning to be felt, create a special reason for an increase at the present time.

In support of the first claim, the company urges that it is fairly entitled to earnings sufficient to yield a return of 6 per cent upon the entire amount of capital honestly and prudently invested and that, instead, it has never received income sufficient to maintain 6 per cent dividends upon its stock, after paying interest at a lower rate upon its funded debt. It further states that it has never been in a position to set aside an adequate reserve for depreciation. On December 31, 1916, the total amount set aside for this purpose was \$7,299, whereas the company claims that the amount would have been at least \$255,000 if adequate provision had been made. The hope which has apparently existed in the past that the normal increase in revenue from a five-cent fare would gradually bring prosperity has been abandoned and a six-cent fare is regarded as essential.

In support of the second claim, the company urges, in the first place, that it is now feeling the effects of the great increase in prices of coal, steel, copper and other materials used in railway operation which has taken place since the outbreak of the European war, and which seems likely to continue for an indefinite period in the future. In the calendar year 1916, for example, the average price paid by the company for coal was \$4.92 per ton. In the present year, it claims that the average cost will not be less than \$7.13 per ton and probably will be considerably more. For the first five months of 1917 the income from the operation of the road (eliminating the Grafton and Upton operations) was insufficient by \$1,840 to pay operating expenses and fixed charges, whereas in the same five months of 1916 the net income over and above these expenses and charges was \$3,955. In the second place, it is stated that the company has, during

the past ten years, supplied power to the electric light company in Milford upon favorable terms, the estimated profit per annum in recent years being about \$7,500. The New England Power Company has, however, negotiated a contract with the Milford company, so that the revenues of the railway company from this source will be cut in half during the present year and will cease altogether in December next. In the third place, it is stated that the outstanding mortgage bonds of the company, aggregating \$500,000 and bearing interest at the rate of 5 per cent, fall due on January 1, 1918. The embarrassment which this fact is likely to cause was described by the president of the company as follows (Record, pp. 48,49): —

Even during the best operating conditions of this company. . . if we could go back to the best operations that we had, funding operations of this character would be difficult. When, however, we take the company's present earnings' statement and conditions generally, the refunding operations seem absolutely impossible. We cannot tell today just what we can do. We don't know. We have reason to hope that we can get some relief as the result of this filing of a new tariff, if this Commission should see fit to permit us to maintain it and establish it, and that our chances for refunding will be better materially than they otherwise would, but even then a very serious and hard problem is confronting us. That is a matter which we will be obliged to take up with this Commission at some later date, but nearer the period of refunding, when we can tell what possible opportunity is open to us. It is impossible to tell now what could be done, even if we knew what our earnings' statement would be, but unless we can have some relief there seems to be nothing but chaos for this enterprise.

Since the date of the hearing, the physical property of the company has been thoroughly examined by the inspection department of the Commission and its books and accounts by the accounting department. The inspectors found that roadbed and track, line, rolling stock, and, indeed, all the property have, on the whole, been well maintained. Some of the cars are in need of repairs and some probably ought to be replaced in the near future, but, on the whole, the condition is good. This report was confirmed by the testimony at the hearing. Even the remonstrants agreed that the property has been well cared for and that the company has given reasonably good service (Record, pp. 81 and 117). The accountants found that the books were well kept, and discovered no items in operating expense which appeared unusual or exorbitant or which were subject to criticism. Sala-

ries are moderate, the \$4,000 per year paid to the superintendent being the only one in excess of \$1,500.

The evidence justifies the conclusion that the stock and bonds, and the larger part of the notes payable, represent honest and reasonably prudent investment. Some of the notes may represent replacements which should ultimately be charged against income, but in any event the amount is not large or open to serious criticism. The necessary adjustments will be made, in due course, when the floating indebtedness is funded by the issue of securities more permanent in character. Some criticism has been made of the investment in the line from Hopedale to Uxbridge. It is true that traffic on this line is light, but it furnishes the gateway to the park at Mendon, which to some extent, at least, creates traffic upon all parts of the system. There is no evidence that this investment was exorbitant, or that it was not made in good faith.

The leased line, the Medway and Dedham, also has very light traffic, but this is a reorganized road with a very low capitalization, — but \$3,221 per mile of main track, — and the rental of \$3,000 per year is equally low. It is sufficient to pay but 4 per cent dividends upon the \$65,000 of stock which constitutes the entire capitalization. Separate accounts have been kept by the Milford and Uxbridge of the operation of this leased line, and it appears that the net earnings have been sufficient in all but one year to pay the rental and yield a small surplus in addition. While the physical condition of the property has been materially improved since the lease, the inspection department reports that there is still room for improvement, and it may be, if this work is done, that results will not be as favorable in succeeding years. The lease expires in 1919, however, and there is no reason to believe that it will in any event constitute a serious burden to the Milford and Uxbridge. Receipts from electric passenger operation on the Grafton and Upton have about paid the operating expenses incurred by the Milford and Uxbridge, but yield little, if anything, for a return upon the investment (chiefly in rolling stock) made for this purpose. This road, however, acts as a feeder and brings desirable traffic to the Milford and Uxbridge which probably would not be secured if it were independently operated.

Undoubtedly there is considerable accrued depreciation in the property which has not been offset by a depreciation reserve. It is also true that, if no dividends had been paid, better provision

for depreciation might have been made. The question thus raised, however, has been considered at length by this Commission in other rate cases, notably in the Middlesex and Boston rate case and in the Bay State rate case, and there is no reason for departing in this instance from the precedents which have been established. To use the language of the Middlesex and Boston opinion: —

. . . The payment of large dividends, in substantial excess of an investment return upon money, without proper care of depreciation, would be clearly gross mismanagement calling for condemnation and perhaps substantially affecting even a rate case. But in the present case, dealing with the right of this corporation to have a living wage, for its capital, the fact that the stockholders have hitherto received small dividends, makes no material difference in the claim of the corporation for an increased rate.

An important consideration in this connection is the fact that this company has maintained its property in reasonably good condition and has furnished good service.

In fixing the amount which ought to be set aside each year as a reasonable provision for depreciation, the company has been conservative. In the computation the following percentages were used: —

	Per Cent.
Rails,	3
Power stations and equipment,	4
Rolling stock,	2½
Buildings,	2½

These percentages were applied to the book value of the several classes of property indicated in this table, where that value was known. In the case of rails, the cost was estimated at \$30 per long ton, and park buildings were given an arbitrary value of \$10,000. No other classes of property were included. The total appropriation, based on the figures for the year ended June 30, 1916, was \$17,230.09. Taking all factors into consideration, we think that the company is justified in regarding the amount so estimated as a minimum, rather than a maximum, provision for depreciation.

The company estimates that the proposed increase in fares will, at the maximum, yield \$45,042 additional revenue per year, and that the amount is more likely to be but \$31,052, or even less. This estimate was made by taking the actual fare and ticket collections on the Milford and Uxbridge rails for the first

four months of the current year and for the last eight months of the year 1916. It was assumed that the number of persons using the new workingmen's tickets between Milford and Hopedale, and in other fare zones where such tickets are not now available, would equal the number of passengers using Framingham-Holliston tickets who, under the new schedule, would pay 6 cents. The maximum estimate is based upon the assumption that the increased fares would not lead to any falling off in the riding, while the lower figure assumes that traffic would be sufficiently reduced so that a flat increase in revenue of 15 per cent only would result. Judged by the experience of other companies which have increased their rates, the latter estimate is more nearly in accordance with the probabilities. As a rule, the increase in revenue secured from the introduction of a 6-cent fare has been less, rather than greater, than 15 per cent.

Assuming, then, that \$31,05 is a reasonable figure, on the basis of the returns for the year ended December 31, 1916, the net income of the company would be increased from \$28,811 to \$59,863. This amount would be sufficient to provide for 6 per cent dividends amounting to \$32,400 upon the capital stock, and to make possible a setting aside of the additional sum of \$14,783 estimated for depreciation, leaving a balance of \$12,680 to cover loss in revenue from the Milford Electric Light Company contract and the marked increase in cost of coal and materials which is now beginning to be felt. While this increase has been noticeable in market prices for some months, the company, until recently, has been protected, in part at least, by contracts previously made and a stock of materials previously acquired at lower prices.

Very carefully prepared exhibits were submitted by the company to show the probable results from the operation of the road in 1917 and in 1918 with the proposed increase in fares. Allowance was made in these exhibits for the increased cost of coal and materials, for the loss in revenue from the sale of power, for the additional appropriation for depreciation, and also for somewhat increased interest charges upon the floating indebtedness in both years and upon the funded debt in 1918. On the other hand, allowance was made for the net benefit which is likely to result in 1918, when power is obtained from a new source. It seems that the company has recently negotiated for a supply from the New England Power Company, and believes that it can in this way secure its power, after January 1, 1918,

at less than the cost in its own generating plant. According to these exhibits, the net income in 1917, under the new rates, would be \$33,196 at the maximum, and probably not more than \$19,486, while in 1918 it would be \$31,476 at the maximum and but \$17,766 on the lower basis. These estimates are naturally somewhat speculative in character, but upon the whole it does not seem that they have been based upon unreasonable assumptions. For present purposes, however, it is unnecessary to analyze them in detail but it is sufficient to say that there seems to the Commission no reason to believe that, if the full increase desired were allowed, the company would be able, under present conditions, to earn an exorbitant and unreasonable return upon its investment. Nor can it be said that present conditions are merely temporary. As the Commission stated in the Concord, Maynard and Hudson rate case, decided May 25, 1917: —

. . . While it is probable that the prices of coal and certain other commodities which are now maintained at an artificial level may be somewhat reduced, either by change of conditions or by intervention of the federal authorities, it also seems probable that the present era of high prices is not temporary in character but will last at least during the duration of the war, a period in itself very uncertain, and that it will probably continue even beyond that time.

Only two of the towns served by the company appeared in remonstrance at the hearing, namely, Milford and Holliston. The representatives of Milford felt that the company would benefit from the recent reduction in service upon the parallel branch of the Boston and Albany, that in these times a street railway company ought not to ask or expect a normal rate of return, and that, if any relief were needed, it ought to be provided merely by abolishing the special tickets on the Holliston-Framingham section and establishing a uniform fare of 10 cents between these points. On the other hand, the people of Holliston argued that this section, at least, was earning all that it could reasonably be expected to earn for the company, that other sections were responsible for its financial troubles and that, whatever else might be done, the special ticket concession between Holliston and Framingham ought by all means to be retained.

Whatever may be the merits of the claim that a street railway company in these times ought not to ask a normal return upon its investment, it certainly is not the principle upon which the industries are acting which are supplying coal, steel and other

materials to the railways, nor is it a principle upon which this Commission would be justified in proceeding under the law. Furthermore, the application of such a principle would make it difficult for this company to refund the mortgage bonds which fall due in January, 1918, with results which might be unfortunate, not only for the company itself, but also for the public which it serves. The benefit that may accrue to the railway from the reduction in service on the Boston and Albany, also, is likely to be offset by some diversion of traffic to that railroad as a result of the increase in fares. The chief issue for consideration by the Commission, therefore, relates to the fare to be charged on the section between Holliston and Framingham.

As has already been shown, the Holliston-Framingham section was for more than twelve years a one fare zone in which a single fare of 5 cents was charged. In 1910 it was made two zones, thus increasing the fare to 10 cents. Upon recommendation of the Board of Railroad Commissioners, however, the burden of this 100 per cent increase was lightened, through the sale of workingmen's tickets, at the rate of 15 for \$1.00, good at certain hours of the day. In 1913, upon further recommendation of the board, these tickets were made good at all hours of the day for local travel, so that the local fare between Holliston and Framingham, to all intents and purposes, became $6\frac{2}{3}$ cents. It is now proposed to make the regular fare between these points 12 cents, allowing a 10-cent fare during certain hours of the day only, through the use of the general workingmen's tickets, which are to be available all over the system. The maximum increase would thus be 80 per cent and the minimum 50 per cent. In either case the percentage is larger than the percentage of increase proposed on any other section of the road.

Manifestly, so disproportionate an increase cannot be defended, except upon the theory that the fare system which has been in effect since 1913, to say nothing of the system which prevailed prior to 1910, has been discriminatory and unduly favorable to the people of the Holliston-Framingham section. In substance, this is what the company claims. Upon examination, it appears that the facts are as follows: There are two zones between Highland street in Holliston and Framingham, one being 3.76 miles and the other 3 miles long. The average length of zone upon the main line is 3.97 miles, and this is also about the average on the entire system, branches included, taking into consideration transfer limits. Both zones of the Holliston-Framingham section,

therefore, have less than the average length, and one of them, indeed, is the shortest zone upon the main line. It further appears that these zones overlap, so that the length of the entire section is shorter than the sum of the two distances above given, and that most of the local riding is between Holliston Center and Framingham, a distance of only $5\frac{1}{2}$ miles. A charge of 12 cents for this ride would be at the rate of more than 2 cents per mile, while according to the evidence submitted by the company the average fare per zone upon the main line, under the proposed new schedule, would be but 1.51 cents.

Further examination of the evidence shows that the earnings of the Holliston-Framingham section are relatively very good. The following table shows the receipts per car mile for the year ended June 30, 1916, in each section of the system: —

	Cents.
Framingham-Holliston,	32.10
Holliston-Milford,	22.70
Milford-Hopedale,	42.87
Hopedale-Park,	23.47
Park-Uxbridge,	19.47
Milford-Medway,	20.86
Milford-Hopkinton,	19.12

It will be seen that only the section between Milford and Hopedale yields larger earnings to the company in proportion to the car miles operated. The following table, showing the receipts in the various sections in the year ended June 30, 1911, and in the year ended June 30, 1916, indicates, also, that the action of the Board of Railroad Commissioners in 1913 had little, if any, unfavorable effect upon the earnings of the company: —

	1911.	1916.
Framingham-Holliston,	\$40,614 52	\$41,452 89
Holliston-Milford,	33,787 06	34,188 77
Milford-Hopedale,	43,559 71	45,855 31
Hopedale-Park,	15,952 07	14,992 60
Park-Uxbridge,	8,899 96	8,942 87
Milford-Medway,	28,619 03	32,528 48
Milford-Hopkinton,	16,139 75	19,032 49

While there are minor variations, relatively the earnings of the Holliston-Framingham section occupied about the same position

in 1916 as they did in 1911, before the recommendation of the board was carried into effect.

Fare zones upon most of the street railway lines in the commonwealth have been governed largely by the location of town lines and centers and other local conditions, and variations in length, often quite substantial, are the rule, rather than the exception. Unless some entirely new system of collecting fares is substituted, such as the so-called "copper zone system", which is still in the experimental stage, entire uniformity in conditions is not to be expected. If the zone and ticket arrangement proposed by the company were now the established system on this road, and if it had been in effect for some considerable period of time, it is by no means certain that the Commission would regard the apparent discrimination against riders between Holliston and Framingham as sufficient to justify any special concession in fares not given in other zones. Where, however, as in this case, such a concession has been granted for several years with the approval and direct sanction of the supervising commission, where the conditions offer justification for it, and where even a larger concession was voluntarily granted by the company for many preceding years in the past, in the judgment of the Commission it is not just and reasonable that the concession should, in connection with the general increase in fares, be entirely done away with.

It follows that some change should, in this respect, be made in the proposed schedule of fares, and this can be done with equity, we think, by providing for the sale of tickets, at the rate of 10 for \$1.00, which shall be good at all hours of the day for local riding between Highland street, Holliston, and Framingham Depot. This will, in effect, make the regular local rate of fare between these points 10 cents instead of 12 cents. Even on this basis the percentage of increase in rates will be somewhat greater than on other sections of the road. An order is entered below, allowing the new schedule to take effect upon the making of this change.

ORDER.

Notice of the Milford and Uxbridge Street Railway Company relative to increase in rates of fare.

It appearing that on May 25, 1917, an order was entered suspending, until August 1, 1917, the rates and charges stated in the schedule described in said order and designated as Milford and Uxbridge Street Railway Company M. P. S. C. No. 3; and

that said rates and charges were further suspended to August 10, 1917, by an order dated July 31, 1917; and

It further appearing that a full investigation of the matters and things involved has been had, and that the Commission, on the date hereof, has made and filed a report containing its findings of fact and conclusions thereon, which said report is hereby referred to and made a part hereof, it is

Ordered, That the Milford and Uxbridge Street Railway Company be hereby notified that it may establish on all its lines, within thirty days of the date hereof, upon not less than five days' notice to the Commission and the general public, by filing and posting in a conspicuous manner in its waiting rooms and cars in the manner prescribed in section 20 of chapter 784 of the Acts of 1913, a schedule readjusting its rates for the transportation of passengers, in accordance with its schedule filed with this Commission on May 4, 1917, and designated as Milford and Uxbridge Street Railway Company, M. P. S. C. No. 3, except that it shall provide tickets good for 10 continuous rides by local passengers between Framingham Depot (Section A) and Highland street, Holliston (Section B), or intermediate points, for \$1.00, good only for original purchaser or member of his family. It is

Further ordered, That the Milford and Uxbridge Street Railway Company be hereby notified and required to cancel the rates and charges stated in the schedule specified in said order of suspension, so far as they are inconsistent with the basis of fares herein prescribed. It is

Further ordered, That a copy of this order be filed with said schedule at the office of the Commission and a copy hereof be forthwith served upon the Milford and Uxbridge Street Railway Company.

By the Commission,

ALLAN BROOKS,
Assistant Secretary.

NEW BEDFORD AND ONSET FARES.

*Notice of the New Bedford and Onset Street Railway Company
relative to increase in rates of fare.*

P. S. C. 1822.
DECIDED AUGUST 24, 1917.

HENRY H. CRAPO for New Bedford and Onset Street Railway Company.

GEORGE B. CRAPO, Selectman of Marion.

JAMES A. THOMAS for Boot and Shoe Workers' Union of Middleborough.

CHARLES H. PHINNEY }
GEORGE L. ATHERTON } Selectmen of Bourne.

REPORT.

On September 8, 1915, the Commission issued a report and order permitting the New Bedford and Onset Street Railway Company to increase its unit cash fare from 5 cents to 6 cents and to sell tickets, good at any time in lieu of cash, at the rate of 20 for \$1.00. Previously, similar tickets had been sold at the rate of 24 for \$1.00. The company now wishes to eliminate reduced rate tickets entirely and to have a straight 6-cent fare. Accordingly, on June 25, 1917, it filed a supplementary tariff with the Commission, effective July 26, cancelling the present ticket arrangement. A public hearing was held on July 12, and subsequently the Commission issued an order suspending the proposed change until September 1.

This additional concession is, it seems, sought by the company because the increase already permitted has failed to produce the desired financial results, and because of the burden imposed by higher wages and by prevailing abnormal prices for coal and other materials and supplies. In its 1915 opinion the Commission, after showing how traffic had been divided as between pas-

sengers paying cash and those using tickets, made the following comment (3d Report P. S. C., p. 109): —

. . . Assuming no decrease in traffic and the same relation between the classes of traffic, the increase would produce about \$25,000 additional revenue. There is a decided possibility, however, that a decrease in traffic might result (see the discussion of this question in the Norfolk and Bristol case, decided August 19, 1915), and it seems probable that a larger percentage of the passengers would use the reduced rate tickets. In our opinion the revenue realized from the increase would not exceed \$20,000 and would be quite unlikely, indeed, to reach that point.

Actual trial has shown that this estimate was optimistic. The increase went into effect in October, 1915. In the twelve succeeding months traffic fell off 9.13 per cent, while passenger revenue increased about 4.45 per cent, the total amount in dollars and cents being \$5,360.95. In the nine months beginning October, 1916, and ending with June, 1917, results were only slightly more favorable. In comparison with the same months in 1914-15, under the old rates, traffic decreased 8.12 per cent, while passenger revenue increased 5.88 per cent, the total increase in dollars and cents being \$4,480.86. In comparison with the same months in 1915-16 the increase in revenue was \$1,981.92.

It appears that this relatively poor showing has been caused, not only by decrease in traffic, but, in part, by an increase in the use of tickets. Comparing the year ended June 30, 1915, with the year ended June 30, 1917, the comparative numbers of cash passengers and ticket passengers were as follows: —

	1915.		1917.	
	Number.	Per Cent Total.	Number.	Per Cent Total.
Cash fares,	1,890,022	69.44	1,112,553	47.23
Reduced tickets,	678,811	29.94	1,122,265	47.64
School tickets,	128,610	4.72	96,968	4.12
Excursion tickets,	24,433	.90	19,230	.19
Through tickets,	-	-	4,587	.82
	2,721,876	100.00	2,355,603	100.00

Results, from the point of view of net income, have been even less satisfactory, owing to the increase in operating expense. The

following table shows the net income for the past six years, taking in each case the twelve months' period ending June 30th: —

	Net Income.
1912,	\$19,209 96
1913,	16,775 19
1914,	11,742 41
1915,	7,385 71
1916,	9,286 28 <i>d</i>
1917,	6,807 27

It will be seen that in the year following the increase in fares the road actually failed to earn fixed charges, while in the year which has just closed, although results were somewhat more favorable, net income was still below the level of previous years. The increase in expense in the past two years has been caused partly by higher wages and partly by an increase in maintenance cost. Since 1915, the company states, wages of conductors and motormen have been increased about $13\frac{1}{3}$ per cent; wages of car house employees and linemen, about 25 per cent; and wages of track men, about 43 per cent; the total increase amounting to between \$9,000 and \$10,000 per year. Maintenance expense has been enhanced by the cost of changing the grade of the railway at certain points in conformity with the regulations of the Massachusetts Highway Commission and by rather extensive renewals of pole lines. While certain of these expenditures may be regarded as abnormal, there seems little prospect, so long as prices of materials and supplies remain at their present level, of decrease in the total expense of operation. To illustrate: The company now buys its power and the unit price fluctuates, under the terms of the contract, with the market price of coal. It is estimated that the increase in cost of power on this account will be between \$6,500 and \$7,500 during the coming year.

The history, investment and operations of the company were carefully investigated by the Commission at the time of the application for an increase in rates in 1915, and the facts developed were fully stated in the report then issued. Further consideration of these matters at this time is unnecessary. The number of reduced fare tickets used last year amounted, as shown above, to 1,122,265. If these tickets are abolished, the increase in revenue from this source will be no more than \$11,000. It is clear that if the company maintains its property as it ought to be maintained, provides for depreciation and gradually charges

off property now unused, such an increase will certainly not result in an excessive return upon investment. In view of the disappointing results from the increase already made, it may be urged that the company is likely to suffer, rather than benefit, from any further increase of fares. This suggestion is met by the company by the following statement: —

The decrease in passengers riding cannot be attributed solely or even principally and, indeed, only slightly to the increase in fares. It was no greater decrease than for the year or two preceding. A constant falling off of pleasure riding, and much business riding, had been experienced before the higher fare went into effect, at least equal to the decrease after the higher fare went into effect. It is not unreasonable to assume that the higher fare yielded 10 per cent or more in receipts than would otherwise have been received. The decrease in the number of passengers riding is due in large measure to the increase of automobiles in the towns served, a continuing increase which shows no sign of abating.

This claim is not entirely borne out by the facts, for the records show a constant growth of traffic up to and including the year ended June 30, 1915. It is true, however, that riding fell off seriously in the summer of 1915, before the increase in fares went into effect, and it is also true that, even with the decrease in traffic, the company has secured some net financial benefit from the change. There is no evidence that it will not benefit from a further increase sufficient to justify the Commission in interfering with the judgment of the management in this respect. The new schedule will be permitted to become effective on September 1st without further suspension, upon the understanding that at least three days' notice of the change will be given to the public.

For the Commission,

ANDREW A. HIGHLANDS,
Secretary.

THE NORTON, TAUNTON AND ATTLEBORO RATE
CASE.

*Notice of the Norton, Taunton and Attleboro Street Railway Com-
pany relative to proposed increase in rate of fare for passengers
upon its railway.*

P. S. C. 1812.
DECIDED AUGUST 30, 1917.

LOTHROP WITHINGTON for Norton, Taunton and Attleboro
Street Railway Company.
JOHN B. TRACY for City of Taunton.

REPORT.

On June 29, 1917, the Norton, Taunton and Attleboro Street
Railway Company filed with the Commission notice of its in-
tention to increase the unit of fare upon its railway from 5 cents
to 6 cents. On July 17th the operation of this new schedule was
suspended by the Commission until September 1, 1917, pending
an investigation. A public hearing was held on July 27th.

This company owns and operates a line of railway extending
from Taunton through the town of Norton to Attleboro, with
a branch from Norton Center to Mansfield, the total track mile-
age being about 19 miles. The population in this territory as
shown by the 1915 census was as follows: —

Attleboro,	18,480
Mansfield,	5,772
Norton,	2,587
Taunton,	36,161

The advantage of relatively large centers of population at the
termini is offset by the fact that the road is in competition, upon
both main line and branch, with the New York, New Haven and
Hartford Railroad Company, and between Taunton and Attle-
boro with the Taunton and Pawtucket Street Railway Company.
It enters the center of Taunton over the tracks of the Bay State

Street Railway Company and the center of Attleboro over the tracks of the Interstate Consolidated Street Railway Company. The fare zones are comparatively long, ranging from 2.848 miles to 5.192 miles and averaging 3.723 miles. Four fares are collected between Taunton and Attleboro, and also between Taunton and Mansfield and between Attleboro and Mansfield.

The present company is the successor of the Norton and Taunton Street Railway Company, which was organized in 1897 and which went into the hands of a receiver on July 6, 1915. At that time the corporate deficit amounted to \$143,181 and the liabilities of the company were as follows: —

Capital stock,	\$297,000
Funded debt,	296,000
Current liabilities,	172,628
Total,	<u>\$765,628</u>

The current liabilities were largely made up of matured interest unpaid. The assets of the company included a line from Mansfield to Easton which had been abandoned, and also rolling stock and a car barn which had been destroyed by fire just prior to the receivership. On February 7, 1916, the then existing property was purchased at a receiver's sale by a committee representing the bondholders of the old road and was turned over to the present company, organized for that purpose. On December 21, 1916, the Commission found the fair cost of replacing the railway and property so acquired to be \$213,864, and the issue of stock to the amount of \$120,000 has been approved. The company will also be permitted to issue 5 per cent mortgage bonds to the amount of \$120,000, covering the balance of the replacement value and the fair cost of the new rolling stock and the car barn which were furnished by the bondholders' committee during the receivership. It will be seen that the total capitalization of the new company in stock and bonds, namely, \$240,000, will be less than the funded debt of the old company.

An exhibit filed by the company shows that during the twelve months ended June 30, 1917, it failed to earn operating expenses by \$2,371.74. The figures were as follows: —

Gross receipts,	\$64,780 65
Operating expenses,	67,152 39
Deficit,	<u>\$2,371 74</u>

These operating expenses, however, have been investigated by the accounting department of the Commission and it appears that certain items were abnormal in character and ought not reasonably to be used as a basis in fixing rates at the present time. Thus, expenditures for "Maintenance of Way" included special charges due to changes in grade and location necessitated by the work of the Massachusetts Highway Commission; expenditures for "Buildings, Fixtures and Grounds" contained payments representing what were really additions and betterments to the new barn; "General Expenses" included items for rent of the car house and equipment which were owned by the bondholders' committee during the receivership but are now the property of the company, and also special charges occasioned by the receivership proceedings. The items regarded as abnormal and not likely to recur were listed by the department as follows:—

Maintenance of way,	\$2,400
Maintenance of buildings,	900
Receiver's salary and expenses,	1,998
Legal expenses,	300
Rent of car house,	300
Rent of equipment,	3,300
	<hr/>
	\$9,198

It also appears, both from evidence submitted by the company and from the investigation of the accountant, that conditions in the company's power plant are far from satisfactory and that about \$4,600 per year might be saved if arrangements were made for the purchase of power from outside sources. On the other hand, wages paid to motormen and conductors are now relatively very low, ranging from $22\frac{1}{2}$ cents to $27\frac{1}{2}$ cents per hour, and the men have recently organized and are demanding higher wages. Payments for injuries and damages have also been abnormally low during the receivership. It seems reasonable, therefore, to allow about \$4,000 per year for probable increases in these items.

Making the allowances thus indicated, both for abnormal expense last year and for probable increases in expense in the immediate future, the yearly operating expenses are reduced to \$57,354.39. Upon this basis the operations of the company for the year ended June 30, 1917, would have produced a surplus over expenses, without allowing for depreciation, of \$7,426.26. Deducting from this amount \$1,732.20, the taxes paid in the

last calendar year, the balance applicable to interest and dividends would have been \$5,694.06, or not enough to pay the interest upon the \$120,000 of mortgage bonds. The company's need for additional income is, therefore, evident.

If the company should gain the full theoretical increase of 20 per cent in revenue by raising its unit of fare from 5 cents to 6 cents, the total additional income, upon the basis of the receipts for the year ended June 30, 1917, would be \$12,956.13. Using the adjusted figure for operating expenses, this would yield a surplus income, applicable to interest and dividends, of \$18,650.19, or enough to pay 6 per cent upon the investment and leave a balance of \$4,250.19, or less than 2 per cent, for depreciation. The company, however, believes that the actual advantage gained will be much less than this theoretical figure owing to loss in traffic occasioned by the increase. It estimates that this loss will be at least 10 per cent in all zones and about 15 per cent in the zone entering Taunton, where the Taunton and Pawtucket Street Railway Company has a line in close competition having a 5-cent unit of fare. Upon this basis, the additional revenue received from the increase would be less than \$4,500. Judging from the experience of other companies that have increased the unit of fare to 6 cents, this estimate is not unreasonable.

It cannot, therefore, be held that the proposed increase in fares would result in excessive earnings, and the Commission finds that it is just and reasonable. The attention of the company, however, is called to a possible modification which is deserving of serious consideration. As stated above, one terminus of the line is Taunton, a comparatively large urban community of nearly 40,000 inhabitants. This city is very largely served by the Bay State Street Railway Company, charging 6 cents as a cash fare, but selling 20 tickets for \$1.00, each ticket good in lieu of a cash fare on all days except Saturday afternoons, Sundays and holidays. It is also entered by the East Taunton Street Railway Company and the Taunton and Pawtucket Street Railway Company, both now having a 5-cent unit of fare, and the latter company is in close competition for some distance from the center of the city with the Norton, Taunton and Attleboro. For this reason the management has itself estimated that the increase to a straight 6-cent fare is likely to produce in this zone but 5 per cent increase in revenue. If tickets should be sold at the rate of 20 for \$1.00, good upon this Taunton zone for a distance from the center of between 3 and 3½

miles, the exact limit to be fixed by conference between the company and the Commission, it would seem that the company would be better able to meet the existing competition and thus to avoid some of the contemplated loss in traffic. This, however, is a matter of judgment, and the Commission, under the circumstances of the case, does not feel justified in going further then to direct the attention of the company to the possible wisdom of such a modification of its schedule.

ORDER.

It appearing that on July 17, 1917, an order was entered suspending until September 1, 1917, the rates and charges stated in the schedule specified in said order; and it further appearing that a full investigation of the matters and things involved has been had, and that the Commission on the date hereof has made and filed a report containing its findings of fact and conclusions thereon, which said report is hereby referred to and made a part hereof; it is

Ordered, That the Norton, Taunton and Attleboro Street Railway Company be hereby notified that it may readjust the rates and charges on all its lines in accordance with its notice filed with the Commission on June 29, 1917, within thirty days of the date hereof and upon not less than five days' notice to the Commission and the general public, by filing at this office and by posting in a conspicuous manner in its waiting rooms and cars, in the manner prescribed in section 20 of chapter 784 of the Acts of 1915, a printed schedule of its rates and charges thus readjusted.

It is

Further ordered, That the operation of the schedule filed by the Norton, Taunton and Attleboro Street Railway Company on June 29, 1917, be further suspended and that the use of the rates and charges stated therein be further deferred until the said printed schedule of readjusted rates and charges becomes effective in the manner above provided.

It is

Further ordered, That a copy of this order be filed with said notice at the office of the Commission, and a copy hereof be forthwith served upon the Norton, Taunton and Attleboro Street Railway Company.

By the Commission,

ANDREW A. HIGHLANDS,

Secretary.

THE NORWOOD, CANTON AND SHARON RATE CASE.

Notice of the Norwood, Canton and Sharon Street Railway Company of proposed increase in rates of fare.

P. S. C. 1557.
DECIDED MAY 2, 1917.

ROBERT H. HOLT for Norwood, Canton and Sharon Street
Railway Company.

J. A. HALLORAN for Town of Norwood.

REPORT.

On October 27, 1916, the Norwood, Canton and Sharon Street Railway Company filed with the Commission, in accordance with section 20 of chapter 784 of the Acts of 1913, notice of a proposed increase in passenger fares, to take effect on February 1, 1917. As stated in its notice, the company proposes to make the cash fare seven cents for each ride within each fare limit as now established, instead of the present cash fare of five cents, and to sell tickets, each good for a single fare, in strips of ten for sixty-five cents and of sixteen for one dollar. In compliance with the law requiring street railway companies to sell school tickets at one-half the regular rate of fare, the company proposes to sell school tickets in strips of ten for thirty-five cents, instead of twenty-five cents as at present. The Commission suspended the operation of the proposed schedule of fares until May 10, 1917, and a public hearing was given on January 23, 1917.

The company was organized in 1900 under the general laws, and the road was completed and started operation in 1901. It is about $6\frac{1}{4}$ miles in length and consists of two separate and disconnected parts. The northerly part, about $2\frac{3}{4}$ miles in length, is located wholly in the town of Norwood, beginning at the corner of Washington and Day streets and running to the town line between Norwood and Canton at the center of the bridge crossing the Neponset river, where it connects with the tracks of the

Blue Hill Street Railway Company. The southerly part, a little over $3\frac{1}{2}$ miles in length, is wholly in the town of Sharon, and runs from Sharon Heights to East Sharon, where it connects at the Sharon-Canton town line with the Blue Hill Street Railway Company.

The articles of association of the company provided for a capital stock of \$125,000. In 1902, the Board of Railroad Commissioners authorized a reduction of the capital stock from the amount named in the articles of association to \$85,000, with the usual stipulation that no shares were to be issued until the whole amount of the capital stock so fixed should be paid in cash. Until 1914, the subscribers to this issue had actually paid in only \$50 on the par value of \$100 of each of the original 1,250 shares. Consequently, until 1914, there was no capital stock issued and outstanding, but merely receipts issued to the subscribers amounting in the aggregate to \$62,500. In 1914 the company petitioned the Commission for authority to reduce its capital stock to \$62,500. The original cost of the property, as shown by an appraisal then made by the engineer of the Commission, was \$101,593, and the present value \$78,773. The Commission having found that the property of the company represented an investment in excess of the aggregate par value of the capitalization which the company proposed to issue, authorized the reduction of the capital stock to \$62,500. Subsequently, in the same year, the company petitioned the Commission for authority to reduce its capital stock still further to \$32,500, and to issue five per cent first mortgage bonds to the amount of \$30,000 to purchase and retire an equivalent amount of the capital stock of the company. This petition was approved by an order of the Commission dated December 9, 1914. The present capitalization authorized by the Commission consists, therefore, of capital stock to the amount of \$32,500 and bonds to the amount of \$30,000.

In 1902, when the road commenced operation, the total investment in railway equipment and other permanent investments, as shown by the books of the company, was \$147,788.22. By successive accretions this sum had increased to \$163,375.74 in 1911. The annual return of the company for that year also showed a deficit in the profit and loss account of \$67,963.31, and current liabilities amounting to \$171,310.58. These liabilities, in the form of notes, appear to have been held by the stockholders of the road, and during the next fiscal year, when the amount had increased to \$172,969.37, they were all cancelled.

The annual return of the company for 1912, as the result of adjustments made necessary by such cancellation, showed an apparent surplus of \$103,402.93. Upon the issue of the securities authorized by the Commission in 1914, the book value of the permanent investments as of June 30, 1914, was reduced from \$161,560.09 to \$62,500. The reduction of the book value of the company's assets to that amount made it necessary for the company to reduce its surplus account for the year ending June 30, 1915, to \$4,091.34. The company's return for the year ending June 30, 1916, the last return available, showed permanent investments, cash and current assets amounting to \$64,829.87, and liabilities of the same amount, consisting of capital stock, \$32,500, bonds, \$30,000, current liabilities, \$1,392.95, accrued depreciation, \$2,341.02, and a debit balance in the profit and loss account of \$1,394.10.

The company's financial history, as shown upon its books and the appraisal of original cost made by the engineer of the Commission, indicate that the current liabilities of over \$172,000, cancelled during the fiscal year 1912, represented in part investment in permanent property and in part deficits in operation. It is unnecessary, however, to determine the exact character of the expenditures represented by the liabilities so cancelled, as the company has agreed that the outstanding capitalization of \$62,500, which was approved by the Commission, should be taken as the amount of the investment for the purpose of fixing rates in the present proceeding.

The following table shows the results from the operation of the road, after deducting all charges against income, as shown by its annual returns, from the beginning of operation up to the fiscal year ending June 30, 1913: —

	Deficit.
1902,	\$17,147 93
1903,	12,898 96
1904,	12,085 67
1905,	9,635 86
1906,	6,628 54
1907,	2,389 41
1908,	1,540 05
1909,	971 85
1910,	2,469 43
1911,	1,574 13
1912,	1,603 13
1913,	1,052 31 ¹

¹ Surplus.

The vouchers and accounts of the company for the years ending June 30, 1914, 1915, and 1916, have been carefully analyzed by the chief accountant of the Commission. This analysis shows that the books have been carelessly kept, that expenditures have been improperly distributed to the various classification accounts or have not been included in the proper fiscal year, and that in certain cases vouchers for expenditures shown on the company's books were not available or were not in sufficient detail to permit of verification. More detailed reference to this matter is made in the report of the chief accountant to the Commission which is filed with the record of the case. This company is under the same management as the Norfolk and Bristol Street Railway Company, and the comment of the Commission in the Norfolk and Bristol rate case on the accounting methods of that company and the recommendations of the Commission in relation thereto are in general applicable to the Norwood, Canton and Sharon Company. (See 3d P. S. C. Rep., pp. 126-129.)

The following table shows the results from operation according to the returns of the company for 1914, 1915 and 1916, as compared with the amounts after correction by the chief accountant:—

	1914.		1915.		1916.	
	Returns.	Revised.	Returns.	Revised.	Returns.	Revised.
Operating revenue, . . .	\$11,435 60	\$11,435 60	\$11,190 38	\$11,190 38	\$10,874 73	\$10,874 73
Operating expenses, . . .	10,212 12	9,942 12	10,681 67	10,941 82	14,735 05	13,432 46
	\$1,223 48	\$1,493 48	\$508 71	\$248 56	\$3,860 32d	\$2,557 73d
Deductions from income (net),	335 70	335 70	246 04	246 04	1,625 12	1,625 12
Net divisible income, . . .	\$887 78	\$1,158 78	\$262 67	\$2 52	\$5,485 44d	\$4,182 85d

d Deficit.

As shown by the above tables, the company during the first 11 years of operation and in 1916 failed to earn its operating expenses. The surplus earnings in 1913, 1914 and 1915 were small and no dividends have ever been paid. The relatively poor showing in 1916 was due in part to the fact that depreciation of way and structures was charged for the first time on the books of the company, the amount so charged being \$1,832.28. Previous to 1915 no charge was made for depreciation of equipment. A charge of \$254.37 was, however, made for that purpose in 1915 and a like amount in 1916. As the average income of the

company during the last three fiscal years has not only been insufficient to pay any dividends or fixed charges but even to meet current operating expense, and as the financial showing of the company during the previous 12 years of its operation was even more unfavorable, the need of additional net earnings is apparent.

So far as it is possible to judge from a comparison with other street railway companies, and from the investigation of the company's affairs made by the Commission, the Norwood, Canton and Sharon Company appears to be operated at a relatively low cost and there is no indication that any substantial saving can be made through increased economies in operation. The power cost is relatively high, but the company is obliged to buy its supply and claims that no more advantageous arrangement can be made. No evidence to the contrary appears. The fact that the company's track and equipment are in poor repair and that old style motors are used is undoubtedly a factor in the high car mile cost of power.

An analysis of the company's maintenance account during the last three fiscal years shows that the average expenditures for this purpose, exclusive of depreciation, were \$1,132.04 for maintenance of way and structures and \$1,023.35 for maintenance of equipment, or a total of \$2,155.39. The company admits that it has not maintained its roadbed and equipment in good operating condition, and the inspection department of the Commission has made a report to the same effect. In that report it was stated that on certain portions of the line the trolley wires and poles were badly in need of replacement or repair and that there is urgent need of better ballast, new ties and other improvements in the track. By reason of the company's failure to make adequate provision for maintenance and depreciation in the past, at least 3,000 new ties and 30 new poles each year should be installed and a total expenditure of at least \$6,000 a year for the next three to five years should be made upon the property in order to put it in a reasonably satisfactory operating condition. After expenditures of that amount have been made for the period indicated, the annual maintenance charge would probably be about \$3,000. The chief accountant of the Commission has estimated that, in order to make adequate provision for depreciation, there should be an additional annual charge of not less than \$2,500 for depreciation of way and structures and of \$500 for depreciation of equipment. The normal expenses for maintenance and depreciation would thus be about \$6,000 per year.

As already stated, the present condition of the property is such that, in so far as the earnings of the company make it possible to do so, this entire amount should be actually expended on the property for the next four or five years, but thereafter approximately half of this sum should be used for maintenance, and the balance held as a reserve for depreciation. If the accounts of the company were adjusted by making provisions for maintenance and depreciation upon the basis indicated, the average annual operating expense of the past three years would be approximately \$14,500.

The arrangement made by the company with the Blue Hill Street Railway Company for the joint operation of a through car from Norwood Center to Washington street in Canton, and the arrangement under which the Norwood, Canton and Sharon company is managed by the general manager and superintendent of the Norfolk and Bristol company at a total annual cost of \$200, appear to be advantageous to the Norwood, Canton and Sharon company. Some comment was made at the hearing in regard to the relationship between the Norwood, Canton and Sharon Street Railway Company and the Sharon Real Estate Company, which are owned by the same interests. During the last three years there have been several inter-company transactions, mainly in the form of loans by the Norwood, Canton and Sharon company to the Sharon Real Estate Company. It appears, however, that in such cases interest was properly charged against the real estate company and the larger part of the money advanced has already been repaid. While there is nothing in these relations which calls for serious criticism, it would appear that, in view of the fact that the amount of cash which the Norwood, Canton and Sharon Street Railway Company has at its command is extremely limited, sound business judgment would require the company to conserve its funds for the payment of its necessary expenses and would allow the Sharon Real Estate Company to borrow its money elsewhere.

It was also stated at the hearing that if the company ran a through car from Sharon Heights to Canton Junction over the Blue Hill street railway in the same manner in which a joint service is now operated from Norwood to Washington street, Canton, it would result in greater convenience to the public and would induce additional riding, which would swell the company's revenue. This joint service would be an undoubted convenience to the public, but it is doubtful if it would materially affect the

company's net revenue. It appears also that the company has endeavored to make such an arrangement with the Blue Hill company, but without finding it possible to reach any agreement.

Owing to the general rise in the prices of labor and materials the operating expenses of the company in the immediate future, at least, are likely to be higher than they have been in the past. The gross income in the past three years has shown an annual decline, indicating a corresponding decrease in the number of passengers. The company operates through a sparsely settled territory showing little growth in population, and while the riding habit might be somewhat stimulated if the property were put in better operating condition, it is not likely that there would be any material increase in the number of passengers in the near future, even if the present fare were maintained.

We have already stated that the company should expend annually for the operation of its road approximately \$14,500 a year. In order to provide for the payment of taxes and a return of 6 per cent on the investment of \$62,500, about \$4,000 additional would be required, making a total of \$18,500. The average of the company's gross operating revenue for the past three years is less than \$11,200. If no substantial saving seems possible through greater economy of operation, and if no increase in gross revenue is to be anticipated from the growth of traffic, the company might reasonably claim that in so far as it may do so, without charging rates so high as to be unreasonable in themselves, it is entitled to revise its existing rates so as to yield an additional gross revenue of about \$7,000 a year.

As already stated, the company proposes to increase the unit of cash fare from five cents to seven cents, and to sell tickets good throughout the day in strips of 10 for \$0.65 and in strips of 16 for \$1.00, and to sell scholars' tickets in strips of 10 for \$0.35 instead of \$0.25 as at present. Assuming that the number of passengers carried by the company should be the same as during the last fiscal year, and assuming that 25 per cent of the passengers pay cash fares, and that one-half of the remaining passengers use the 10-strip tickets and the other half use the 16-strip tickets, the increase in rates would yield an increase in gross revenue of \$3,333. The actual increase would, however, undoubtedly be less, as the Commission in previous cases has called attention to the fact that the experience of other street railway companies has shown that the estimated increase in gross earnings from an increase in rates has not been realized, by reason of the decrease of riding. Under the schedule pro-

posed, therefore, the actual increase in gross revenue would be less than the amount to which the company might reasonably claim that it is entitled, and less than the amount which is needed for the proper upkeep of the property.

The fact that the road consists of two separate parts, one about $3\frac{1}{2}$ miles long in the town of Norwood and the other about $2\frac{3}{4}$ miles long in the town of Sharon, each of which constitutes a fare zone at present, makes it impracticable to provide for any increase of revenue through a rearrangement of existing fare limits. Moreover, it appears reasonable that the unit of fare should be the same for the two zones in Norwood and Sharon, respectively, as the larger amount of riding offsets the slightly greater length of the fare zone in the town of Norwood.

The proposed unit fare of 7 cents is larger than that generally prevailing upon the other street railways in this state and throughout the country. In the Blue Hill rate case the Commission, while it did not undertake to decide the question, intimated that there was serious question as to whether the establishment of an 8-cent fare in that case would not have constituted an unjust discrimination against the short-haul riders, and approved a substitute scheme under which the additional revenue was to be obtained by increasing the number of fare zones instead of raising the unit of fare to 8 cents. (3d P. S. C. Rep., pp. 52, 82.) A rearrangement of fare zones, however, is likely to result in a disproportionate increase for passengers who are obliged thereby to travel in or over an additional fare zone and to pay an additional fare. Indeed, the experience in the Blue Hill case shows that the complications thus created may prove as serious as those which it is sought to avoid. However that may be, it is impracticable, as we have already shown, to make any rearrangement of fare zones in the present case, and the only alternative, if an increase in rates is allowed, is to raise the unit of fare.

The need of additional revenue for the company was generally recognized by representatives of the towns and of the travelling public who appeared at the hearing, and little objection was offered to the 7-cent fare proposed. It was, however, suggested that so large an increase in the unit of fare might discourage traffic to such an extent as to make the change disadvantageous to the company in its own interest, but as the Commission stated in a similar connection in the Blue Hill case, this "is a question of judgment upon which the officers of the road ought fairly to be allowed within reasonable limits free exercise of their own discretion." (3d P. S. C. Rep., p. 83.) As no other scheme

has been suggested under which the company could obtain the additional revenue which is so urgently needed, the Commission is of the opinion that the schedule of rates filed by the company should receive the approval of the Commission.

ORDER.

Notice of the Norwood, Canton and Sharon Street Railway Company of proposed increase in rates of fare.

It appearing that on January 29, 1917, an order was entered suspending until March 1, 1917, the rates and charges stated in the schedule specified in said order, and that said rates and charges were further suspended to May 1, 1917, by orders dated respectively February 28, 1917, and March 30, 1917; it further appearing that a full investigation of the matters and things involved has been had and that the Commission under date hereof has made and filed a report containing its findings of fact and conclusions thereon, which said report is hereby referred to and made a part hereof; it is

Ordered, That the Norwood, Canton and Sharon Street Railway Company be hereby notified that it may readjust the rates and charges on all its lines in accordance with its notice filed with the Commission on October 27, 1916, within ten (10) days of the date hereof and upon not less than five (5) days' notice to the Commission and the general public by filing at this office and by posting in a conspicuous manner in its waiting rooms and cars in the manner prescribed in section 20 of chapter 784 of the Acts of 1913, a printed schedule of its rates and charges thus readjusted.

It is

Further ordered, That the operation of the schedule filed by the Norwood, Canton and Sharon Street Railway Company on October 27, 1916, be further suspended and that the use of the rates and charges stated therein be further deferred until the said printed schedule of readjusted rates and charges becomes effective in the manner above provided.

It is

Further ordered, That a copy of this order be filed with said notice at the office of the Commission and a copy hereof be forthwith served upon the Norwood, Canton and Sharon Street Railway Company.

By the Commission,

CHARLES E. MANN,

MAY 2, 1917. [P. S. C. 1557]

Executive Secretary.

Motion of the Norwood, Canton and Sharon Street Railway Company relative to extension of time for effective date of new rates.

It appearing that the Norwood, Canton and Sharon Street Railway Company, owing to the difficulty of securing tickets, has been unable to comply with the terms of the order of the Commission dated May 2, 1917, wherein said company was authorized to readjust the rates and charges on all its lines within ten (10) days of the date of said order, — it is

Ordered, That the time within which the Norwood, Canton and Sharon Street Railway Company may readjust the rates and charges on all its lines, as authorized in the order of the Commission dated May 2, 1917, be hereby extended to June 20, 1917, subject to all the conditions and restrictions contained in said order.

Attest:

ALLAN BROOKS,

JUNE 2, 1917.

[P. S. C. 1557]

Assistant Secretary.

THE WARE AND BROOKFIELD RATE CASE.

Notice of the Ware and Brookfield Street Railway Company relative to proposed increase in rates of fare.

The so-called main line of the Ware and Brookfield street railway begins in Clinton street, in Ware, and extends in a north-easterly direction to the Common in West Brookfield. A branch connects this line with Gilbertville, in the town of Hardwick. The road is wholly single track and there are, in all, 11.71 miles of track and .41 miles of sidings and switches. On February 21, 1917, this company filed with the Commission, in accordance with section 20 of chapter 784 of the Acts of 1913, notice of a proposed increase in passenger fares and adjustment of fare limits, to take effect on March 31, 1917. As stated in this notice, it is proposed —

(1) *To move the fare limit between Ware and Gilbertville from the car barn to New Braintree road.* — With this change, the zone between Clinton street, Ware, and New Braintree road will be 3.708 miles in length, while the distance between the latter point and the end of the line in Gilbertville will be but 1.584 miles. No other change in fare limits is proposed.

(2) *To make the regular cash fare 7 cents for every local ride within the limits of any fare zone, except the zone between New Braintree road and Gilbertville, where the fare will continue to be 5 cents.* — At present the regular cash fare for such local rides is 5 cents in all zones.

(3) *To make the regular cash fare 10 cents for a through ride between Ware and Gilbertville or intermediate points.* — The present fare for such a ride is 7 cents.

(4) *To make the fare 7 cents for so-called workingmen's trips between Ware and Gilbertville or intermediate points.* — The present fare for such trips is 5 cents.

(5) *To make the fare 12 cents for so-called workingmen's trips between Ware and West Brookfield or intermediate points.* — The present fare for such trips is 10 cents.

The company in the past has not issued special workingmen's tickets, but has merely charged the lower rate of fare on certain

specified trips in the morning and evening. The right is reserved in the new schedule to issue special tickets for this purpose if at any time such an arrangement seems desirable. The company will continue to sell school tickets, according to law, at one-half the regular rate of fare.

The road of this company runs through sparsely settled rural territory, the population served being as follows: —

TOWN.	1900.	1905.	1915.
Ware,	8,263	8,594	9,346
Hardwick,	3,203	3,261	3,596
New Braintree,	500	477	453
West Brookfield,	1,448	1,384	1,288
	13,414	13,716	14,683

There is no physical connection with any other street railway system, although the Springfield Street Railway Company has a line extending into Ware and the Worcester and Warren Street Railway Company, a line extending into West Brookfield, and such connections might easily be made.

The road was originally constructed by the Hampshire and Worcester Street Railway Company, which was incorporated in 1901. This company went into the hands of a receiver on January 17, 1905, after an unsuccessful financial career. The liabilities at that time were as follows: —

Capital stock,	\$155,000
Mortgage bonds,	135,000
Current liabilities (approximate),	65,000
	<hr/> \$355,000

The stock and bonds have all been issued with the approval of the Board of Railroad Commissioners. On December 2, 1905, the property was sold at a receiver's sale and was transferred, subject to the mortgage debt, to the present Ware and Brookfield Street Railway Company, organized for the purpose under chapter 381 of the Acts of 1900 (now St. 1906, c. 463, Pt. III, §§ 144-147). The new company, after a determination of the "fair cost of replacing the railway and property so acquired," was permitted by the Board of Railroad Commissioners to issue

stock of \$100,000 par value, so that it began business with the following liabilities: —

Capital stock,	\$100,000
Mortgage bonds,	135,000
	<hr/>
	\$235,000

The reduction in liabilities effected through the receivership was therefore about \$120,000.

Since the reorganization, the company has never earned the interest on its debt and has, indeed, earned operating expenses in but two years, the record being as follows: —

	Operating Deficit.
1906,	\$1,884 ¹
1907,	1,118
1908,	2,005
1909,	1,204
1910 (9 months),	105 ¹
1911,	496
1912,	4,863
1913,	5,183
1914,	5,674
1915,	10,026
1916,	12,868

On June 30, 1916, the unpaid interest on bonds amounted to \$71,437, and \$43,932 had been advanced by the owners of the road to cover immediate operating losses. The total profit and loss deficit on that date amounted to \$149,441, which includes a recent loss of about \$30,000 incurred in scrapping the company's power plant. The superintendent is paid \$1,250 per year, but no other officer receives any salary.

The present owners, at marked personal sacrifice, have, it seems, done a great deal since 1906 to improve the physical condition of the property, and the fact that track and equipment are, on the whole, well maintained and the road reasonably well operated, was generally conceded at the public hearing. The owners stated, however, that if they cannot "bring the road up to meet its operating expenses and a very reasonable depreciation" it will be necessary to discontinue operation. The proposed increase in rates, it is fair to say, is in the nature of a last resort. Assuming no decrease in traffic, it is estimated that it may produce about \$12,000 additional revenue per year, or substantially the amount

¹ Excess.

of operating deficit in 1916. While maintenance expenditures in that year were, perhaps, above normal, and while the company has recently contracted for a supply of power on terms favorable in comparison to the cost of manufacture in its own small power house, which has now been abandoned, it is also true that the increase in fares is likely to discourage riding, so that net results are problematical. Certainly there is no reason to believe that the increase will enable the company to earn even the full interest on its funded debt. If it earns operating expenses it will, it seems, be doing very well.

At the hearing it was evident that the patrons of the road appreciate the position in which the company finds itself, and substantially no opposition was made to the proposed increase, except in the case of workingmen's fares. After full consideration of the circumstances of the case, the Commission has no hesitation in saying that the company ought to be permitted to try out the new schedule, and it will therefore be allowed to take effect.

ORDER.

Notice of the Ware and Brookfield Street Railway Company of proposed increase in rates of fare.

It appearing that on February 21, 1917, the petitioner filed with the Commission, in accordance with section 20 of chapter 784 of the Acts of 1913, notice of a proposed increase in passenger fares and adjustment of fare limits to take effect March 31, 1917;

It further appearing that a full investigation of the matters and things involved has been had, and that the Commission on the date hereof has made and filed a report containing its findings of fact and conclusions thereon, which said report is hereby referred to and made a part hereof; it is

Ordered, That the Ware and Brookfield Street Railway Company be hereby notified that it may readjust the rates and charges on all its lines in accordance with its notice filed with the Commission on February 21, 1917, within thirty days of the date hereof and upon not less than five days' notice to the Commission and the general public, by filing at this office and by posting in a conspicuous manner in its waiting rooms and cars, in the manner prescribed in section 20 of chapter 784 of the Acts of 1913, a printed schedule of its rates and charges thus readjusted.

It is

Further ordered, That the operation of the schedule filed by the Ware and Brookfield Street Railway Company on February 21,

1917, be further suspended, and that the use of the rates and charges stated therein be further deferred until the said printed schedule of readjusted rates and charges becomes effective in the manner above provided for.

It is

Further ordered, That a copy of this order be filed with said notice at the office of the Commission and a copy hereof be forthwith served upon the Ware and Brookfield Street Railway Company.

By the Commission,

ANDREW A. HIGHLANDS,

MARCH 29, 1917.

[P. S. C. 1693]

Secretary.

THE WORCESTER AND WARREN RATE CASE.

Notice of the Worcester and Warren Street Railway Company relative to increase in rates of fare.

On January 17, 1917, the Worcester and Warren Street Railway Company filed with the Commission, in accordance with section 20 of chapter 784 of the Acts of 1913, notice of a proposed increase in passenger fares to take effect February 19, 1917. As stated in this notice, it proposes —

(1) *To make the cash fare seven cents for every ride within the limits of any fare zone.* — The present cash fare is six cents.

(2) *To withdraw all existing reduced fare tickets, other than half-fare tickets for school children.* — At present workingmen's tickets are sold in books of 100 for \$5.00, and school tickets may be used by teachers as well as by pupils.

(3) *To reduce the age limit for children carried free of charge from six years to five years.*

(4) *To charge an extra fare for every package carried by a passenger on the car platform.*

On February 17, 1917, the Commission suspended the operation of this new schedule until April 1, 1917.

The main line of the Worcester and Warren extends from the terminus of the Worcester Consolidated Street Railway Company in Spencer, through East Brookfield, Brookfield, West Brookfield and Warren to West Warren, a distance of 16.06 miles. A branch line extends from a point just west of East Brookfield to North Brookfield, a distance of 3.54 miles, so that the total length of the road is 19.6 miles. It was built by the Warren, Brookfield and Spencer Street Railway Company in 1896. This company, after an unsuccessful financial career, went into a receiver's hands on May 29, 1912, after defaulting the interest on its bonds. At the time, its liabilities were as follows: —

Capital stock,	\$150,000
Bonds,	107,000
Current liabilities (approximate),	64,000
<hr/>	
Total,	\$321,000

The property was sold at a receiver's sale on April 8, 1915, to a committee representing the bondholders of the old company, and shortly afterwards was purchased from this committee by the present company, the Worcester and Warren Street Railway Company, organized for the purpose under the provisions of sections 144-147 of Part III of chapter 463 of the Acts of 1906. The "fair cost of replacing the railway and property so acquired" was found by the engineer of the Commission to be about \$160,000, and the property was taken over at this figure, the company beginning business with the following liabilities: —

Capital stock,	\$106,000
Notes payable,	54,000
	<hr/>
	\$160,000

In other words, liabilities were scaled down, through the receivership, a total of about \$161,000. On April 26, 1916, a further issue of \$10,600 stock and an issue of five per cent mortgage bonds, amounting at par to \$72,000, were authorized by the Commission to pay the floating indebtedness incurred in the purchase of the property to provide working capital and to meet the cost of additions and improvements either made or in contemplation. The issue of the bonds at a discount of ten per cent was approved, upon condition that this discount should gradually be amortized out of earnings. The total authorized capital is therefore but \$186,600, or \$9,623 per mile of road, an exceedingly low figure. Of the bonds authorized, \$20,000 par value have not yet been issued, the unfunded debt on January 1, 1917, amounting to \$16,958.

In the entire history of the property dividends have been paid in only four years, as follows: —

	Per Cent.
1896,	4
1899,	2½
1900,	2½
1901,	2

If a more conservative financial policy had been followed in the early years, it is probable that even these small dividends would not have been paid. Coming down to the present, the net divisible income for the year ended June 30, 1916, after paying operating expenses and fixed charges, was but \$1,083, or about one per cent upon the capital stock outstanding, although only \$156 was set aside for depreciation during the year. The super-

intendent of the company is paid \$1,200 per year, but no other executive officer receives any salary.

An unusual feature of the history of the road is that its earnings have been decreasing for some considerable period of time. Yearly receipts reached their high point in 1903, when they amounted to \$66,415. Since that year, and notwithstanding the fact that the fare was increased in January, 1905, from 5 cents to 6 cents, receipts have been declining. The total last year, \$45,952, was the lowest since 1897. This has no doubt been due in large part to the fact that the population in the territory served has been decreasing, as shown by the following table:—

TOWNS.	1895.	1900.	1905.	1910.	1915.
Spencer,	7,614	7,627	7,121	6,740	5,994
Brookfield,	3,270	3,062	2,388	2,204	2,059
West Brookfield,	1,467	1,448	1,384	1,327	1,288
Warren,	4,430	4,417	4,300	4,138	4,268
North Brookfield,	4,635	4,587	2,617	3,075	2,947
	21,425	21,141	17,810	17,534	16,556

The average decrease for all five towns between 1895 and 1915 has been about 23 per cent.

For the six months ended December 31, 1916, gross earnings were \$24,722, as contrasted with \$25,144 for the same period in the previous year, and operating expenses were \$22,996 as against \$20,289. Assuming no decrease in traffic as a result of the increase in fares, the company estimates that the additional revenue derived from the increase, based on the fares collected in the year ended June 30, 1916, would be \$8,141. On June 4, 1916, a wage increase of about \$2,000 per year went into effect. Allowing for this increase, but not for the added cost of materials and supplies due to prevailing high prices, the company estimates that, on the basis of operating expense and taxes for the year ended June 30, 1916, and without any further provision for depreciation, the additional revenue required to pay interest on its authorized funded debt and 7 per cent dividend on its capital stock would be \$9,968. It directs attention, also, to the fact that the physical condition of the property is not good and that a substantial amount of additional capital ought to be invested in improvements, if the financial condition of the company were favorable enough to permit the marketing of additional securities.

In view of these circumstances, and of the further fact that an increase in fares, judged by the experience of other companies,

is likely to cause loss of traffic, there is no reason to believe that the proposed new schedule would enable the company to earn even as much as 6 per cent upon its present shrunken capitalization.

At the public hearing official representatives of the towns affected opposed the change, but their opposition was directed more particularly to the proposed entire abolition of workingmen's tickets. Since the hearing, the company, after conference with these remonstrants, has agreed that the tariff should be amended by the following clause: —

Workingmen's books of tickets will be sold in books of 50 tickets for \$3.00, each ticket the equivalent of one cash fare and to be used by working men and working women on week days, between the hours of 5 and 7 in the morning and 5 and 7 in the evening.

In a signed communication, it has asked the Commission for permission to make this amendment, and similar communications signed by the representatives of the interested towns have been filed, withdrawing all opposition if this change is made.

A seven-cent unit cash fare is open to objection on many grounds, and it may seriously be doubted whether such a fare will result in any substantial net benefit to the company. In this case, however, this change is open to less than the usual amount of objection, for the percentage of short-haul traffic is apparently small and the fare zones are comparatively long. In most of the zones, the rate for a ride covering the entire distance would be less than two cents a mile, even with the seven-cent fare. Furthermore, in view of the history of this company and the character of the territory in which it operates, it is reasonably entitled to make any experiments in fares which may have the effect of improving its financial condition and enabling it to continue in operation and gradually to improve its property. This was, it seems, the view of the representatives of the interested towns and the reason for the final withdrawal of opposition.

Under the circumstances the Commission will allow the new schedule to become effective on short notice, embodying the amendment which has been agreed to and which is above set forth.

ORDER.

Notice of the Worcester and Warren Street Railway Company of proposed increase in rates of fare.

It appearing that the petitioner, on January 17, 1917, filed with the Commission, in accordance with section 20 of chapter

784 of the Acts of 1913, notice of a proposed increase in passenger fares and fare limits issued January 12, 1917, to be effective February 19, 1917, and that on February 17, 1917, an order was issued suspending the operation of said schedule and deferring the use of the rates and charges therein stated until the first day of April, 1917, unless otherwise ordered by the Commission;

It further appearing that a full investigation of the matters and things involved has been had and that the Commission on the date hereof has made and filed a report containing its findings of fact and conclusions thereon, which said report is hereby referred to and made a part hereof, — it is

Ordered, That the Worcester and Warren Street Railway Company be hereby notified that it may readjust the rates and charges on all lines in accordance with its notice, filed January 17, 1917, and in accordance with its request, filed February 23, 1917, for permission to amend its tariff by adding a clause providing for the sale of books of fifty tickets for three dollars, each ticket the equivalent of one cash fare, within thirty days of the date hereof and upon not less than five days' notice to the Commission and the general public, by filing at this office and by posting in a conspicuous manner in its waiting rooms and cars, in the manner prescribed in section 20 of chapter 784 of the Acts of 1913, a printed schedule of its rates and charges thus readjusted.

It is

Further ordered, That the operation of the schedule filed by the Worcester and Warren Street Railway Company, as above, be further suspended, and the use of the rates and charges stated therein be further deferred until the said printed schedule of readjusted rates and charges becomes effective in the manner above provided for.

It is

Further ordered, That a copy of this order be filed with said notice at the office of the Commission, and a copy hereof be forthwith served upon the Worcester and Warren Street Railway Company.

By the Commission,

ANDREW A. HIGHLANDS,

MARCH 30, 1917. [P. S. C. 1653]

Secretary.

ACCOMMODATIONS, FARES, RATES, SERVICE.

RAILROAD RATES.

Notice of the Boston and Albany Railroad of proposed increase in rates for the transportation of lime, lime ashes and limestone.

RICHARD VAN UMMERSEN for Boston and Albany Railroad.

EDWIN T. MURDOCH for Palmer Lime and Cement Company.

On December 28, 1916, the Boston and Albany Railroad issued a tariff, M. P. S. C. No. 975, effective on February 1, 1917, increasing its rates for the transportation of lime, lime ashes and limestone. On complaint of the Palmer Lime and Cement Company, which is the selling agent of lime-producing plants located on the line of the Boston and Albany railroad at Farnams and Cheshire, this tariff was suspended with respect to intrastate rates until April 1 and later to May 10, 1917. A public hearing was held on February 7, 1917. After the hearing the Pittsfield Lime and Stone Company and the Cheshire Lime Manufacturing Company joined the Palmer Lime and Cement Company in objecting to the proposed increase.

A belt of limestone extends from Long Island Sound through the Housatonic Valley, the Berkshire Hills and the Green Mountains. All the important lime-producing points in New England are found in this belt, with the exception of Rockland and Rockport in the state of Maine. The latter are located on the coast and have the advantage of a water haul to Boston, but all the other points are dependent entirely upon rail transportation. The following table shows the rates, expressed in cents per hundred pounds, which have been in effect on the Boston and Albany railroad from Farnams and Cheshire to Springfield, Worcester and Boston during the past 20 years, and also the proposed rates and the existing sixth-class rates:—

	Prior to 1898.	1898 to 1902.	1902 to 1907.	1907 to Date.	Proposed Rates.	Sixth- class Rates.
To Springfield,	6 $\frac{3}{4}$	6 $\frac{3}{4}$	6 $\frac{3}{4}$	5 $\frac{1}{2}$	7	7
To Worcester,	8 $\frac{3}{4}$	8 $\frac{3}{4}$	7	7	8	10
To Boston,	9	7	7	7	9	11

The 7-cent rate to Boston was originally introduced in 1898 to meet the competition of the lime from Rockport and Rockland, and for some time thereafter the Worcester rate was illegal, since the Massachusetts law, prior to 1913, definitely prohibited the charging of a higher rate for a shorter haul. (See section 199 of Part III of chapter 463 of the Acts of 1906.) This was corrected in 1902, however, when the Worcester rate was reduced from $8\frac{1}{3}$ cents to 7 cents. It will be seen that the proposed rates involve substantial advances over the existing rates. Stated in percentages the increases would be:—

	Per Cent.
To Springfield,	30.9
To Worcester,	14.3
To Boston,	28.5

The company claims that the proposed new tariff is in line with numerous changes in commodity rates which the New England railroads have made in the past three years. In the fall of 1913, the Public Service Commissioners of Massachusetts, New Hampshire and Vermont and the Railroad Commissioners of Maine met in joint conference with Commissioner Prouty of the Interstate Commerce Commission to consider "the proposal of the Boston and Maine Railroad to increase its rates of transportation." A new class rate tariff was recommended, and this was adopted and became effective on the Boston and Maine system in April, 1914. A similar tariff was adopted by the Boston and Albany in May, 1914, and by the New York, New Haven and Hartford in December, 1914. Following this change, it was anticipated and contemplated by the commissioners that commodity tariffs would be revised, on the whole, upward. Many such revisions have been made since 1914, as a rule without contest, and the general freight agent of the Boston and Albany testified at the hearing in the present case that the increases have, in important instances, been greater than that which is now proposed in the case of lime (Record, p. 16).

It is further claimed that the tariff in question conforms to a plan for the revision of all lime rates between New England points, agreed upon by the New England roads. New tariffs, based upon this agreement, have already gone into effect upon the Boston and Maine and New York, New Haven and Hartford roads. The broad principle adopted was 10 cents per hundred pounds for distances of 200 miles and over, and 9 cents for distances under 200 miles, observing as a maximum the existing

sixth-class rates. For distances under 85 miles, therefore, the latter rates apply. The proposed 7-cent rate to Springfield, for example, is the sixth-class rate. In its new tariff the Boston and Albany observes the principle thus outlined, except that the rate to Worcester is made 8 cents instead of 9 cents. The new rates upon the Boston and Maine and the New York, New Haven and Hartford railroads are advances, in many cases, over the rates previously in effect, as shown by the following table: —

	Old Tariff.	New Tariff.
North Adams to Springfield,	7	7
North Adams to Worcester,	7	9
North Adams to Boston,	7	9
West Stockbridge to Springfield,	9	9
West Stockbridge to Worcester,	9	9
West Stockbridge to Boston,	7	9
Canaan, Conn., to Springfield,	7	7
Canaan, Conn., to Worcester,	9	9
Canaan, Conn., to Boston,	7	9
Swanton, Vt., to Springfield,	10	10
Swanton, Vt., to Worcester,	10	10
Swanton, Vt., to Boston,	8	10

Under the statute the burden of proof is upon the company to show that the increase proposed "is necessary in order to obtain a reasonable compensation for the service rendered" (St. 1913, c. 784, § 21). Certain of the evidence offered by the company to sustain this burden seems to the Commission to have little weight. For instance, it is urged that, since lime is sixth-class under the official classification, any commodity rates on lime which are lower than the sixth-class rates are *prima facie* reasonable. This contention is not, in our opinion, well founded. The official classification is necessarily somewhat arbitrary in character, and commodity rates are established for the very reason that the six classes fail adequately to meet various conditions. Such rates amount to the establishment of additional classes and are a recognition of the fact that certain commodities, by reason of their volume, value or character, belong in a class by themselves. Lime has been so set apart by the Boston and Albany for more than 20 years, and, under the circumstances, the sixth-class rates cannot be regarded as a measure of just charges.

Nor have we been impressed by the evidence submitted by the company in the form of comparative rates on certain other commodities, namely, ice, cement and moulding sand. These comparisons are insufficient in number to serve as a basis for

sound conclusions, and are weakened by the absence of information as to tonnage, value, method of loading, etc.

There are circumstances, however, which tend strongly to sustain the company's position. In the first place, this is the first attempt which it has made to increase rates on lime in a great many years. The increase in class rates, both interstate and intrastate, was permitted in 1914 on the ground that rising prices for labor and materials had rendered the company's freight revenues inadequate, and it was clearly the assumption at the time that commodity rates would, in general, be advanced in a similar way. The new tariff on lime, as above stated, is in line with tariffs which have recently gone into effect, without formal protest, on both the Boston and Maine and the New York, New Haven and Hartford roads. In the second place, the lime producers at Farnams, Cheshire and Pittsfield would be able, under the proposed tariff, to reach all the principal points of consumption on the line of the Boston and Albany railroad upon terms as favorable or more favorable, so far as rail transportation is concerned, than those which other lime producers in New England now enjoy.

On the other hand, conditions at Boston tend to offset these circumstances. The 7-cent rate to this point now in effect was made to meet the competition of the Rockland and Rockport lime, moving by water from the state of Maine. The Boston and Maine and the Maine Central roads have apparently given up the attempt which they formerly made to meet this competition upon their parallel rail route, and have established a joint rate of 9 cents from Rockland to Boston, upon which no lime moves except under unusual conditions. Lime from Boston and Albany points, however, has been able to reach Boston to some extent under the 7-cent rate, notwithstanding the competition by water. Last year, for example, 70 cars of lime came to East Boston from these points, 31 cars to East Cambridge, 21 cars to Boston and 17 cars to Chelsea. If the proposed 9-cent rate should go into effect, this movement would probably cease. As the general freight agent of the road testified (Record, p. 25), the new tariff means that "we will not undertake to meet any water competition from the Rockport, Maine, section any longer." Little or no lime moves to Boston from points in Massachusetts, Connecticut and Vermont under the new rates now in force on the Boston and Maine and the New York, New Haven and Hartford roads, and apparently it is the common

intention to abandon the Boston field definitely to Rockland and Rockport.

In contrast to this attitude are the lime rates to New York City. The following table shows the mileage and rate from various lime-producing points to that city, in comparison with mileage and present and proposed rates from Farnams to Boston: —

	Miles.	Present Rate.	Proposed Rate.
Farnams to Boston (Boston and Albany),	155	7.0	9
Farnams to New York (Boston and Albany-New York Central).	198	7.0	-
Glens Falls, N. Y., to New York (Delaware and Hudson-New York Central).	209	7.9	-
Smith's Basin, N. Y., to New York (Delaware and Hudson-New York Central).	211	7.9	-
Proctor, Vt., to New York (Rutland-New York Central), .	256	9.5	-
Leicester Junction, Vt., to New York (Rutland-New York Central).	271	9.5	-
Cavendish, Vt., to New York (Rutland-New York Central),	280	9.5	-
New Haven Junction to New York (Rutland-New York Central).	290	9.5	-
Chazy, N. Y., to New York (Delaware and Hudson-New York Central).	331	9.5	-

It should be said that the Boston and Albany absorbs the switching charge at Boston, so that deliveries can be made without increase in rate to points in Boston on the New York, New Haven and Hartford and the Boston and Maine roads, whereas the rates shown above to New York City do not include lighterage and apply only to stations and piers which can be reached by direct haul. On the other hand, the latter rates all involve movements over the lines of two connecting carriers, and such through routes are usually held to justify higher rates than movements over a single line.

According to counsel for the Boston and Albany, the New York rate is low because it is a competitive rate, "established by two factors over which the Boston and Albany has no control, namely, the rate from New Haven producing points, — for example, Danbury and Redding, Connecticut, — much nearer New York" and from "lime-producing plants south of New York." The existing 7-cent rate to Boston, however, was established, as shown above, for precisely similar reasons. The question, therefore, arises whether the Boston and Albany ought to be permitted to abandon the competitive field in Boston, while it continues, in connection with other carriers, to give its producers access to the competitive field in New York City. Even if the

producers be left out of consideration, it is clearly undesirable that Boston should have, for all practical purposes, but one source for its supply of lime, if such a situation can reasonably be avoided.

While a carrier may be permitted to make a rate lower than would otherwise be just and reasonable in order to meet competition, it may be doubted whether it can be required to make such a rate. In this case, however, there is no positive standard for determining what is a just and reasonable rate. The company frankly states that it does not know what the cost is of transporting lime, as distinguished from other commodities. To quote from its brief: —

. . . To endeavor to determine the cost of handling lime as a strict basis of rate making would be a ludicrous attempt on the part of the Respondent to allocate certain fixed charges, such as freight stations, cost of roadbed, station forces, yard crews, etc., which can only approach the merest approximation and, consequently, of little value on the question of proper rates.

The general freight agent of the road testified (Record, p. 31) that he bases such rates upon the "rule of the three C's," that is, "comparison, competition and compromise."

Applying this rule, competition prevails at Boston as well as at New York; the comparison with the New York rates is unfavorable to the proposed Boston rates; and there is no evidence that the factor of compromise has entered in any way into the determination of the new rates. So long as the carriers find it to their advantage to haul lime from Farnams, Cheshire and Pittsfield to New York at a 7-cent rate, and from points more distant at rates relatively as low, it can hardly be urged that a 9-cent rate to Boston "is necessary in order to obtain a reasonable compensation for the service rendered," or that the Boston and Albany should be permitted to fix a rate to Boston upon which traffic will not move. Uncontradicted evidence submitted by the complainants also indicates that prevailing rates from lime-producing points in Pennsylvania are not higher than the New York rates above cited.

Summing the matter up, and after giving careful consideration to all the circumstances and conditions, the Commission is of the opinion that the company has failed to sustain the burden of proof and that the tariff now in suspension ought to be disallowed. It does not follow, necessarily, that no increase over existing rates ought to be permitted. The company, however, in connection with other carriers is seeking from the Interstate Commerce Commission a 15 per cent increase in all its inter-

state freight rates, and, if this is allowed, will doubtless seek a similar increase in its intrastate rates. It has also been stated that a revision of the rates on lime from producing points to New York City is contemplated. In view of these circumstances, it seems inexpedient to the Commission to attempt at this time to pursue the matter further and it may reasonably be deferred, without prejudice, for possible future consideration upon either of the contingencies which have been mentioned.

ORDER.

Notice of the Boston and Albany Railroad of proposed increase in rates for the transportation of lime, lime ashes and limestone.

The Boston and Albany Railroad having filed with this Commission a tariff numbered M. P. S. C. No. 975, to become effective on February 1, 1917, increasing its rates within the commonwealth for the transportation of lime, lime ashes and limestone, and

It appearing that the Commission, after due notice, entered upon an investigation concerning the propriety of the increases and the lawfulness of the rates, charges, regulations and practices enumerated and described in said tariff, and

It further appearing that the Commission, under an order dated January 24, 1917, suspended the operation of said tariff and the use of the rates and charges therein until the first day of April, 1917, and under successive orders dated March 27 and April 30, 1917, further suspended the operation of said tariff and the use of the rates and charges therein until the tenth day of May, 1917, and

It further appearing that the Commission, on the date hereof, has made and filed a report containing its findings of fact and conclusions thereon, which said report is hereby referred to and made a part hereof, it is

Ordered, That the Boston and Albany Railroad be hereby notified and required to cancel, on or before May 10, 1917, the tariff so suspended and numbered M. P. S. C. No. 975, so far as it applies to intrastate rates, and it is

Further ordered, That a copy of this order be filed with said tariff at the office of the Commission and that a copy hereof be forthwith served upon the Boston and Albany Railroad.

By the Commission,

ANDREW A. HIGHLANDS,

MAY 3, 1917. [P. S. C. 1658]

Secretary.

Petition of the New York, New Haven and Hartford Railroad Company for approval of the making of a special minimum rate for a special train from North Easton to Easton and return.

After consideration, it appearing that good cause has been shown, under the provisions of section 20 of chapter 784 of the Acts of 1913, for the making of a special minimum rate of \$25.00 for the operation of a special train by the New York, New Haven and Hartford Railroad Company from North Easton to Easton and return, as set forth in the petition dated March 8, 1917, — it is

Ordered, That the Commission approve the making of a special minimum rate of \$25.00 for the operation of a special train by the New York, New Haven and Hartford Railroad Company, as specified above; this action in no wise to be considered as a precedent for future action of the Commission in similar cases.

Attest: ANDREW A. HIGHLANDS,
MARCH 10, 1917. [P. S. C. 215] *Secretary.*

Petition of Davis and Brock, of North Adams, and the Boston and Albany Railroad (New York Central Railroad Company, lessee) to authorize payment of a claim for reparation.

This is a petition of Davis and Brock, of North Adams, and the Boston and Albany Railroad (New York Central Railroad Company, lessee) requesting that the Boston and Albany Railroad (New York Central Railroad Company, lessee) be authorized to repay said Davis and Brock the sum of \$13.70 as special reparation under the provisions of chapter 92 of the General Acts of 1916.

The railroad corporation having joined in the petition, no public hearing was necessary. From evidence presented by affidavit it appears that the sum of \$157.70 was paid by Davis and Brock to the railroad in freight charges during the month of October, 1916, upon four car loads of sand of an aggregate weight of 377,280 pounds shipped by the Birnie Sand and Gravel Company from North Wilbraham to North Adams. The rate legally applicable was 9 cents per hundred weight, as contained in tariff M. P. S. C. No. 595, at pages 17 and 23, but the agent at North Wilbraham incorrectly used a rate of 95 cents per cubic yard, upon which basis charges were collected. There was also an

overcharge of \$5.70 on car B. & A. 23953, due to an error in computation.

When the shipments in question moved, the Boston and Albany Railroad published no commodity rate on sand in car loads from North Wilbraham to North Adams, it having had no knowledge of a contemplated movement. Upon its attention being directed to the movement of the cars involved in this petition, a rate of 90 cents per cubic yard was established (M. P. S. C. 962), effective December 18, 1916, this rate being on the usual basis for making rates on sand on the Boston and Albany railroad. The complainants had instructed the agent of the Boston and Maine Railroad at North Adams to have the cars forwarded, on arrival at that point, to Blackinton and Greylock, but the movement beyond North Adams is not involved in this petition.

It is admitted that the rate used, as well as the rate legally applicable at the time of shipment, was, under all the circumstances and conditions, excessive, unreasonable and unjustly discriminatory, and the Commission is of the opinion that reparation should be authorized of the amount in excess of the sum of the aggregate charges upon the rate of 90 cents per cubic yard made effective in M. P. S. C. 962. The aggregate amount of the charges, if this tariff is applied, would be \$144, and the Commission authorizes the repayment of \$13.70, the excess amount, including an allowance for the overcharge above described.

It is therefore

Ordered, That the Boston and Albany Railroad (New York Central Railroad Company, lessee) repay, under the provisions of chapter 92 of the General Acts of 1916, to Davis and Brock of North Adams the sum of \$13.70 as reparation on account of the unreasonable and unjustly discriminatory rate applied upon the aforesaid shipment.

Attest: ANDREW A. HIGHLANDS,

JULY 7, 1917. [P. S. C. 1824-B]

Secretary.

Petition of Sprague, Breed and Brown Company of Beverly relative to certain weighing charges assessed against it by the Boston and Maine Railroad.

From evidence presented at a public hearing it appears that early in 1910 the Sprague, Breed and Brown Company, the petitioner, had under consideration the building of a new and greatly enlarged plant for coal handling in Beverly, and took up with W. F. Berry, the second vice-president and general traffic man-

ager of the Boston and Maine Railroad, the subject of prospective side-track charges. The petitioner was about to make a five-year agreement with the New England Coal and Coke Company to handle all such coal as the New England company chose to ship for five years at a stated rate, and desired to learn just what charges would be made in respect to operation on its proposed side-track. Subsequent to the conference, on March 10, 1910, Mr. Berry wrote the petitioner in part as follows: —

. . . I take this opportunity to advise you that after carefully considering the subject, we have decided that we could not consistently make any charge against your company for use of the special engine and crew that would have to work nights to handle the business, providing the plant is established.

After further correspondence, Mr. Berry wrote the petitioner under date of March 24, quoting the language from his letter of March 10, as above, and confirming the arrangement in the following words: —

This statement meaning that there would be no charge for delivering empty cars to your plant and taking the loaded cars away from your plant. This decision was arrived at after carefully discussing the matter with our operating department and our former president.

The coal company then proceeded to install the plant, track and scales, but a new tariff, effective June 30, 1911, and inconsistent with the understanding which had been reached, was issued by the railroad, providing for charges on shipments weighed as were those of the coal company, this tariff being filed with the Commission on November 13, 1913. Through some oversight on the part of the railroad this new tariff was not called to the attention of the coal company until March, 1914, at which time a bill for back charges of about \$3,000 was presented to it.

Section 19 of chapter 784 of the Acts of 1913, under the terms of which this petition is brought, provides that

The furnishing by any common carrier of any service at the rates and upon the terms and conditions provided for in any existing contract executed prior to the first day of July, 1913, shall not constitute a discrimination unless the Commission shall so determine.

It is contended by the coal company that the understanding reached with Mr. Berry in behalf of the railroad actually constituted a valid contract, effective upon the construction of the

coal company's plant in reliance upon the statement contained in Mr. Berry's letter already quoted. The petition prays that the Commission may rule that the compliance by the said railroad with the understanding above described, up to April 15, 1915, shall not constitute a discrimination. The railroad contends that the arrangement entered into was not a contract and that it cannot relieve the petitioner of the obligation of making payment of the charges assessed against it unless expressly authorized to do so by order of this Commission.

Had the railroad joined in this petition, or if in the subsequent proceedings it had affirmed or assented to the claim that the arrangement above described was an existing contract executed prior to July 1, 1913, the clear-cut issue would have been presented whether the terms and conditions of the contract were discriminatory. If no contract was entered into, the Commission cannot be called upon, under the statute, to make any finding as to discrimination, and, with the parties in disagreement as to whether or not there was a contract entered into, it is not the duty of this Commission to determine that question. Having taken the position that there was no existing contract to provide its service without charge, the railroad should begin action to collect the amount of the charges. In this way the issue of whether or not a contract existed may be raised in the courts, where it should be adjudicated. If the courts sustain the contention of the petitioners that there was a valid contract, its terms and conditions, in the absence of any express determination by the Commission under the statute above cited, may be assumed not to have constituted a discrimination.

As the basis upon which the issue sought to be raised in this case must be determined has not been laid, it is

Ordered, That the petition be dismissed.

By the Commission,

ALLAN BROOKS,

Assistant Secretary.

AUGUST 17, 1917. [P. S. C. 1390]

Petition of the Worcester Chamber of Commerce and the Boston and Albany Railroad (New York Central Railroad Company, lessee) to authorize payment of a claim for reparation.

This is a petition of the Worcester Chamber of Commerce and the Boston and Albany Railroad (New York Central Railroad Company, lessee) requesting that said Boston and Albany Railroad (New York Central Railroad Company, lessee) be author-

ized to repay the Worcester Chamber of Commerce the sum of \$55.58, as special reparation under the provisions of chapter 92 of the General Acts of 1916. The railroad corporation having joined in the petition, no public hearing was necessary. From evidence presented by affidavit it appears that the sum of \$500 was paid February 20, 1917, by the Worcester Chamber of Commerce to the Railroad, under the terms of a contract, dated May 12, 1916, to provide a special train for a minimum number of 500 passengers which was operated from Worcester to Boston on June 15, 1916. A special tariff (M. P. S. C. 126) covering the contract arrangement was filed June 1, 1916. On June 9, 1916, General Passenger Agent W. A. Barrows authorized an amendment to the contract to cover the movement of 300 or more passengers at \$1.35 per capita, and the contract was so amended. Through a clerical error, because of failure to present the contract, as revised, to the Rate Department of the Boston and Albany Railroad, the amendment was overlooked and tariff M. P. S. C. 126 was not cancelled and a new tariff issued to cover the additional arrangement. Inasmuch as the original tariff was issued June 1, 1916, and was not effective until June 15, 1916, and the addition to the contract was made on June 9, 1916, it would have been possible to issue a tariff which would have included the \$1.35 fare for 300 or more passengers as per authority contained in order P. S. C. 450. This was not done and it is admitted that the fare lawfully applicable under tariff M. P. S. C. 126 at the time and over the route for the party moved was, under all the circumstances and conditions then existing, excessive, unreasonable and unjustly discriminatory. At the rate sought to be applied under the amendment to the contract of \$1.35 per capita for a minimum number of 300, the aggregate charges would be \$444.15, and the Commission authorizes the repayment of the amount of \$55.85, which constitutes the difference between the latter amount and the charge of \$500 paid under the terms of the original contract, dated February 20, 1917.

It is, therefore

Ordered, That the Boston and Albany Railroad (New York Central Railroad Company, lessee) repay, under the provisions of chapter 92 of the General Acts of 1916, to the Worcester Chamber of Commerce the sum of \$55.85 as reparation on account of the excessive, unreasonable and unjustly discriminatory rate applied in the carriage of passengers as aforesaid.

Attest: ANDREW A. HIGHLANDS,

JULY 7, 1917. [P. S. C. 1824-A]

Secretary.

RAILROAD SERVICE.

Petition of the Boston and Maine Railroad for authority to discontinue the operation of the West Acton milk car.

The matter to which this application relates was the subject of inquiry three years ago. At that time the Commission, in an order dated July 15, 1914, on the petition of certain farmers of Acton and adjoining towns, who shipped milk to Boston from the West Acton station of the Boston and Maine railroad, required the company to restore the separate milk car service which had existed at that station for many years, on the ground that the quantity of milk delivered at that point, amounting at that time to between 600 and 800 cans daily and requiring practically the full capacity of a milk car, justified the maintenance of such service.

It appears that there has been a material decrease in the quantity of milk received at West Acton, the average daily shipments since the beginning of the current year amounting to about 500 cans. The company states that there is ample room for the West Acton milk in the other cars of the milk train, which handles the milk at various points west of that station, and to which, on its arrival thereat, the West Acton car is now attached. For this reason it wishes to be relieved of the necessity of maintaining a separate milk car service for the sole accommodation of the West Acton milk.

Inasmuch as the findings of the Commission in 1914 relative to the maintenance of the milk car at West Acton were based mainly on the fact that so large a quantity of milk was shipped from that station, the Commission believes, in view of the above facts, that no reasonable objection can be made with respect to its discontinuance or to the contemplated method of handling the considerably smaller amount of milk now being offered for shipment.

In order to provide proper accommodation for the cars and handling of the milk at the station, the company expressed its willingness to construct a suitable covering over the open loading platform, an improvement which, in the opinion of the Commission, should be made before the discontinuance of the milk car becomes effective.

It is therefore

Ordered, That the approval of the Commission be given to the discontinuance of the operation of a separate milk car on

the Boston and Maine railroad to and from the West Acton station and that the order of the Commission dated July 15, 1914, requiring the maintenance of such service be revoked, subject, however, to the right of interested parties to request the re-establishment thereof whenever conditions may justify the same and upon the condition that the existing service shall not be discontinued until the railroad company shall have constructed a suitable covering over the loading platform at the West Acton station.

By the Commission,

ANDREW A. HIGHLANDS,

JULY 12, 1917. [P. S. C. 172]

Secretary.

Petition of citizens of Concord for the restoration of the stopping of train No. 23 on the Fitchburg division of the Boston and Maine railroad at Concord.

Upon a petition brought by patrons of the Boston and Maine Railroad, residing at Ayer, Littleton, Fitchburg and other points west of West Acton, the Commission, on June 20, 1916, after a hearing, ordered the discontinuance of the stopping at Concord of train No. 23, leaving Boston at 5.10 P.M., and the restoration of its previous schedule. [P. S. C. 1048.] The only change that has taken place in the late afternoon service on the Boston and Maine railroad from Boston to Concord since that time has been the discontinuance of the western train leaving Boston at 4.00 P.M., which stopped also at South Acton, Ayer and Fitchburg. The discontinuance of this train was part of the general effort which the railroads are making at the request of the Special Committee of the Council of National Defense to curtail train service. The United States Government is now building a cantonment at Ayer, where several thousand workmen are already employed and where a large number of soldiers will later be encamped. This will result in greatly increased travel between Boston and Ayer, and with the discontinuance of the 4.00 P.M. train will undoubtedly place additional traffic on train No. 23. Indeed, it has already been necessary to put additional cars on this train in order to accommodate the people now using it. Residents of Concord have a train leaving Boston at 5.14 P.M., which makes but five stops between those points, as well as an accommodation train leaving at 5.20 P.M. It seems to the Com-

mission that such changes as have taken place on this division since the order of the Commission of June 20, 1916, so far as they affect the service to the communities under consideration, only emphasize the desirability of continuing the present schedule, and the petition is dismissed.

By the Commission,

ANDREW A. HIGHLANDS,

AUGUST 9, 1917. [P. S. C. 1749]

Secretary.

Petition of citizens of Danvers, Topsfield, Boxford and Georgetown relative to the restoration of certain mid-day service upon the Boston and Maine railroad.

Petition of representatives W. H. Mahoney and George D. Morse relative to the restoration of train leaving Boston at 11.50 A.M. for Danvers (via Salem) on the Boston and Maine railroad.

These are petitions resulting from a reduction in passenger train service on the Boston and Maine railroad, which was made on June 25, 1917. Patrons of the road residing at Topsfield, Boxford and other points on the Georgetown branch desire the restoration of the train which formerly left Boston at 12.10 P.M. and proceeded via the Western Division to Danvers and thence over the Georgetown branch to Newburyport, terminating finally at Amesbury. Patrons at Danvers and Peabody desire the restoration of the train which formerly left Boston at 11.51 A.M. and proceeded via the Eastern Division to Salem and thence over the Lawrence branch to Danvers.

Topsfield and Boxford have no alternative trolley service and are dependent entirely upon the steam road for communication by rail with Boston and other centers. Under the present schedule no train leaves Boston for these points on weekdays between 7.10 A.M. and 2.30 P.M. except a special train on Saturdays which leaves at 1.24 P.M. Ordinarily, therefore, there is no inward service for 7 hours and 20 minutes in the middle of the day. The result is that residents of these towns who go to Boston to transact business are unable to return before the afternoon and are obliged to devote an entire day to the trip when half a day would often suffice. In the case of Danvers and Peabody there is alternative trolley service to Salem, and the chief reason urged for the restoration of the train leaving Boston at 11.51 A.M. was that these communities might have better mail deliveries.

It seems to the Commission that the arguments in favor of a

readjustment of service on the Georgetown branch are strong. Where communities are so dependent upon steam railroad facilities, a gap in the service of more than 7 hours in the busy part of the day is too long. The towns affected are small and cannot expect frequent service, but they are entitled, we feel, to a better proportioned service than is now furnished, and their demand for a train leaving Boston at noon or thereabouts is reasonable. Such a train could operate via the Eastern Division and thus serve Peabody and Danvers. The company states that a mid-day train so routed would probably have a reasonably good earning capacity and that it could be operated with little additional expense, other than for the fuel consumed. It strongly urged, however, the paramount necessity, in the present war emergency, of conserving the coal supply of New England and the inexpediency of operating trains which are not essential to the business needs of the commonwealth. While recognizing the force of this general contention, the Commission is satisfied that, even under present conditions, the people living on the Georgetown branch ought to have a better-balanced service, and that this can be provided without any serious conflict with the general public interest.

It is therefore

Ordered, That the Boston and Maine Railroad be hereby required, after October 15, 1917, to operate a passenger train on weekdays between Boston and Georgetown, via Salem and Danvers, leaving Boston at some time between 12 M. and 1 P.M.

By the Commission,

ANDREW A. HIGHLANDS,

OCTOBER 1, 1917.

[P. S. C. 1865, 1872]

Secretary.

Complaint of Dunstable residents concerning inadequate service on the Acton branch of the Boston and Maine railroad.

Memorandum.

The complainants protested against the discontinuance, effective June 25, 1917, of passenger trains 201 and 202, heretofore operated between Nashua, New Hampshire, and Concord Junction over the Acton branch of the Boston and Maine railroad, and the substitution therefor of a mixed-train service on a somewhat different schedule. Train 202 formerly left Nashua at 6.55 A.M. and reached Concord Junction at 7.45 A.M., where connection was made with a train reaching Boston, by way of the

Fitchburg Division, at 8.45 A.M. Mixed train 250, which replaced this service, leaves Nashua at 6.45 A.M. and is scheduled to connect at Concord Junction with a train which reached Boston, at the time of the filing of the complaint, at 9.05 A.M. In the reverse direction, through service from Boston was formerly given by a train leaving at 5.15 P.M., which connected at Concord Junction with train 201 and reached Nashua at 6.59 P.M. Since the change of schedule, passengers leave Boston at 5.14 P.M., connect with mixed train 253 at Concord Junction and reach Nashua at 7.30 P.M.

The complainants protested the lengthening of the schedule between Boston and points on the Acton branch by about half an hour in each direction and the still greater increase in the actual running time owing to frequent failures to make connection at Concord Junction and to delays incident to the operation of a mixed-train service. Complaint was also made of the annoyance and discomfort caused to passengers through the jolting of the passenger coach by the freight cars to which it is attached. The company claimed that the passenger trains which the complainants desire to have restored earn only 10 cents a train mile; that the substitution of the mixed-train service resulted in a payroll saving of over \$26 a day and the release of one engine and one engine and train crew for use in the freight service; and that this rearrangement of service was part of the general program of passenger train reduction inaugurated by the company in response to the recommendation of the chairman of the Special Committee on National Defense.

Since the date of the conference on this complaint the company has made certain changes in its methods of handling freight at Nashua, which have resulted in an improvement in the running time of train 250 and have enabled it to make connections regularly at Concord Junction. Changes have also been made in the service between Concord Junction and Boston, so that passengers now reach Boston at 9 A.M. instead of 9.05 A.M. While the present service, even with these improvements, is far from an ideal one, the Commission is of the opinion, in view of the very limited travel on this line, that it would not be justified, under the circumstances of the present emergency, in requiring the company to restore the former service.

By the Commission,

ANDREW A. HIGHLANDS,

OCTOBER 13, 1917.

[P. S. C. Com. 1238]

Secretary.

Petition of Esleek Paper Company and others relative to discontinuance of certain freight service on the Turners Falls branch of the New York, New Haven and Hartford railroad.

This petition was brought after notice had been given that the New York, New Haven and Hartford Railroad Company proposed to discontinue its present daily freight service on the Turners Falls branch and to substitute therefor an alternate day service, a change which the petitioners wish the Commission to prevent. The proposed curtailment of the service on this branch is, it seems, a part of the general effort which the railroads are making, at the request of the Special Committee of the Council of National Defense, to conserve their fuel supply, to provide for a maximum utilization of their facilities in performing the service which they will be called upon to perform for the government in the movement of troops, supplies, munitions, etc., and to improve their service with respect to the transportation of the actual necessities of the communities which they serve.

Turners Falls is at the extreme northerly end of a line of the New York, New Haven and Hartford railroad, running from New Haven northerly through Westfield, Easthampton, and Northampton to South Deerfield, where it branches — one line going through Conway to Shelburne Falls and the other to Turners Falls. There is also a short branch running from Northampton through Florence to Williamsburg, known as the Williamsburg branch, and upon this there are rather large manufacturing plants. The plants of the petitioners at Turners Falls are located on a private siding which connects with both the Fitchburg division of the Boston and Maine railroad and with the branch in question of the New York, New Haven and Hartford railroad, and cars are switched to and from this siding by the locomotives and crews of both roads. While the bulk of the business of these plants is shipped over the Boston and Maine, the business via New York City is shipped over the New York, New Haven and Hartford, its route being more direct to this point.

The freight and passenger business on this line north of Westfield is now performed by three crews; one crew leaving Shelburne Falls at 8.15 A.M., on a mixed train to Northampton, arriving there at 9.15 A.M. This crew then does the freight work on the Williamsburg branch and returns with a mixed train, leaving Northampton at 6.30 P.M. and arriving at Shelburne Falls at 7.30 P.M. Another crew leaves Westfield at 7.30 A.M., running

a mixed train to Northampton, and arriving there at 8.10 A.M. This does the freight work on the Turners Falls branch and on the Shelburne Falls branch as far as Conway, returning to Northampton and leaving there at 5.00 P.M. as a mixed train to Westfield, where it arrives at 5.35 P.M. Another crew, which is engaged in other work at Westfield, does the work at Southampton and at Easthampton.

Under the new schedule proposed, all the work now done by these three crews is to be done by two, as follows: The crew that leaves Shelburne Falls at 8.15 A.M. is to do the work it now does between Shelburne Falls and Northampton and also the work at Easthampton now done by the Westfield crew, which is to be relieved. The crew that leaves Westfield at 7.30 A.M. is to do the work on the Turners Falls branch and at Conway, on Mondays, Wednesdays and Fridays, and on the Williamsburg branch on Tuesdays, Thursdays and Saturdays, making an alternate daily service on these branches.

The petitioners contend that the alternate day service would seriously interfere with their business, due to the infrequent spotting of cars made necessary to make car load lots, and the consequent delay to New York shipments.

Since the hearing, the Commission has had a study of the situation made by a member of its Inspection Department, and he reports as follows: —

. . . I have studied the freight conditions at Turners Falls and find that the bulk of the work is done on a private siding which is operated by both the Boston and Maine and the New York, New Haven and Hartford railroads. On account of the necessity of spotting cars on this track by both railroads, I feel positive that the proposed alternate day service of the New York, New Haven and Hartford railroad will force a considerable amount of their shifting onto the Boston and Maine railroad.

I have also studied the freight conditions on the Williamsburg branch. I found twenty-eight freight cars on the tracks at Florence station and every indication that a daily service was needed for this station. The business on the remainder of the branch was light and could probably be compared with the amount of business on the Turners Falls branch. I received information that the two larger industries at Florence would protest if alternate day service was forced on them and, in anticipation of this, I am credibly informed that the railroad intends to maintain daily service to Florence by combining that work on Mondays, Wednesdays and Fridays with the work at Turners Falls and Conway. I believe that if the work at these three points is placed on the one crew it will result in delay to the train leaving Northampton for Westfield at 5.00 P.M.

and will cause complaint from the passengers who reside in Southampton and Westfield.

Including the work at Easthampton and the passenger runs, there appears to be no way in which daily service can be maintained on either the Turners Falls or Williamsburg branch with two crews and, while there may not be sufficient work for the three crews and daily service, I am of the opinion that two crews cannot satisfactorily perform the proposed work.

This Commission, as well as its predecessor, has received many complaints in regard to the continual reduction of service on this branch of the New York, New Haven and Hartford, for the last fifteen years. On petition of citizens of Conway and Ashfield, in 1914, in relation to passenger train service on this line, the Commission said: —

As the line of the New York, New Haven and Hartford railroad between Shelburne Falls and Northampton carries very few passengers and is operated at a loss, and as the company, in its present financial condition, is obliged to exercise all possible economies of operation consistent with reasonable service, the Commission believes that the substitution of the present mixed train for the passenger train and the freight train formerly operated, involves no substantial impairment of facilities and may properly be approved by the Commission. Such approval is, however, given upon the understanding and condition that a reasonably regular and dependable service shall be maintained.

While no question was raised at the hearing as to the reasonableness of present service, the Commission is convinced that the change in freight service contemplated by the company would render it inadequate to meet the needs of shippers in the communities affected and would also interfere with the proper maintenance of the limited passenger service now maintained. The Commission is of the opinion that the company should continue to furnish freight service upon this branch at least to the extent of the service now afforded, and if the contemplated reduction in service should be made by the company the Commission is prepared to enter an appropriate order for the restoration of the existing service.

For the Commission,

ANDREW A. HIGHLANDS,

AUGUST 7, 1917. [P. S. C. 1795]

Secretary.

Petition of Howard Noble, Secretary of Brewers' Association of Massachusetts, relative to the delivery of freight shipments of liquor into no-license towns by the New York, New Haven and Hartford Railroad Company.

The facts in this case are fully set forth in an agreed statement signed by counsel and filed with the Commission, as follows: —

Complaint was made by the Brewers' Association of Massachusetts, through their secretary, dated July 24, 1916, directing the attention of the Board to the practice of the New York, New Haven and Hartford Railroad Company in connection with the delivery of liquor in no-license towns where no license had been issued to any express company for the transportation of liquor within the town. Hearing was held by the Board on September 26, 1916, at which the petitioner was represented by Allan G. Buttrick, and the respondent by F. A. Farnham. A specific instance was shown as follows: —

A barrel containing ten dozen bottles of ale was consigned June 26, 1916, by Rueter & Co. of Boston to A. L. Wheelock, Hopkinton, Mass. Consignee called in person at the railroad company's freight station in Hopkinton bringing a wheelbarrow and intending to claim his property and take it away himself. Delivery was refused by the station agent, after communicating with the office of the General Freight Agent in Boston. It appeared by the allegations of complainant and by statements of respondent through its counsel that under the interpretation placed by that railroad company on the statutes they were not satisfied that they had a right to deliver at their freight station any shipments of liquor in no-license towns in Massachusetts because of the provisions of Revised Laws, chapter 100, section 49, as amended by Acts of 1912, chapter 201.

There was no express company or individual conducting an express business in Hopkinton who had been licensed to transport liquor within the town, and unless the railroad company could deliver at its freight station or actually make delivery at the residence of the consignee, no way appeared in which he could obtain the shipment.

In the particular instance cited the consignee lived on the principal street in Hopkinton, the same being usually called Main street, but the houses on that street were not numbered. It would not have been possible therefore for the street and number to have been marked on the package. It did not appear whether or not the package itself was marked with the name of the street where the consignee lived. Action of the Commission, however, was sought in connection with the general practice of the railroad, which was admitted by the latter, namely, that deliveries would not be made at the freight station, and could only be delivered in a no-license town where there was a licensed express company to which the railroad company could turn over the shipment, not as delivery to the consignee,

but as to a succeeding carrier to complete the journey to destination, the destination having been fixed by the statute as the residence or place of business of the consignee, and not, as in ordinary freight shipments, the freight station of the railroad company.

The railroad bases its position on the provisions in said section 49 requiring the packages to be plainly marked with the name and address, by street and number if there be such, of the consignee, and that delivery to a person other than the owner or consignee "or at any other place than is thereon marked" shall be deemed to be a sale. The railroad takes the effect of these provisions to be a requirement to deliver at the residence or place of business of the consignee, which address is to be shown on the package by some form of description, using the street and number, if any.

Complainant contends that it was not the intention of the legislature to change the destination from the freight station to the local habitat of the consignee, and that this is evident in view of the well-known fact that railroads are not equipped to make deliveries at any place except their freight stations; that the intent of the legislature was to permit deliveries to the consignee himself either at his place of business or at the freight station; and that the requirement of placing a local address on the package was for the purpose of identification and preservation of record on the liquor book, which was to be kept by the delivering party, and for other similar purposes.

The railroad expressed its willingness and desire to deliver in accordance with complainant's interpretation if it lawfully could do so, and would comply with an order of the Board directing it so to do.

Appended to this statement and made a part hereof are copy of the complaint, also circular issued by the respondent to its agents, Circular F 491, effective August 1, 1916, containing quotation from the statutes and list of no-license towns, and instructions to agents regarding the delivery of liquor shipments.

The opinion of the Attorney-General was requested by the Commission upon the question of law raised by a consideration of the foregoing facts. This opinion, dated June 6, 1917, has been received and reads as follows: —

BOSTON, June 6, 1917.

Public Service Commission, 1 Beacon Street, Boston, Mass.

GENTLEMEN: — In consequence of a complaint of the Brewers' Association of Massachusetts relative to the practices of the New York, New Haven and Hartford Railroad Company in connection with the delivery of shipments of intoxicating liquors in no-license towns you have requested my opinion upon the following question: "Do the provisions of R. L., c. 100, § 49, as amended by St. 1912, c. 201, providing that packages of liquors shipped to no-license towns be plainly marked with the name and address, by street and number if there be such, of the consignee, and that delivery to a person other than the owner or consignee, 'or at any

other place than is thereon marked,' shall be deemed a sale, constitute a requirement to deliver only at the residence or place of business of the consignee, the address to be shown on the package by some form of description, using the street and number, if any, and by implication forbid the delivery of such a shipment to the consignee at the freight station of the railroad company? "

R. L., c. 100, § 49, as so amended, is as follows: —

Spirituos or intoxicating liquor which is to be transported for hire or reward for delivery in a city or town in which licenses of the first five classes are not granted, shall be delivered by the seller or consignor to a railroad corporation or steamboat corporation operating a regular line of steamships to Martha's Vineyard or Nantucket, or to a person or corporation regularly and lawfully conducting a general express business, and to no other person or corporation, in vessels or packages plainly and legibly marked in a conspicuous place on the outside with the name and address, by street and number, if there be such, of the seller or consignor, and of the purchaser or consignee, and also plainly and legibly marked on the same place or label as the addresses aforesaid, with the kind and amount of liquor therein contained. No person or corporation not regularly and lawfully conducting a general express business, except a railroad corporation or steamboat corporation operating a regular line of steamships to Martha's Vineyard or Nantucket, or a street railway corporation authorized to carry freight or express, shall receive such liquors for transportation for hire or reward for delivery in a city or town, in which licenses of the first five classes are not granted, nor transport or deliver such liquors in such cities or towns. Delivery of such liquors or any part thereof by a railroad corporation, or steamboat corporation or by a person or corporation regularly and lawfully conducting a general express business to a person, other than the owner or consignee, whose name is marked by the seller or consignor on said vessels or packages, or at any other place than is thereon marked, shall be deemed to be a sale by any person making such delivery to such person in the place in which such delivery is made.

It is the interpretation of the last sentence of this section which raises the question involved. The language here used is substantially the same as that found in the original enactment upon this subject, St. 1897, c. 271.

Section 1 of that statute is as follows: —

All spirituos or intoxicating liquors to be transported for delivery to or in a city or town where licenses of the first five classes have not been granted, when to be transported for hire or reward, shall be delivered by the seller or consignor to a railroad corporation or to a person or corporation regularly and lawfully conducting a general express business, in vessels or packages plainly and legibly marked on the outside with the name and address, by street and number, if there be such, of the seller or consignor, and of the purchaser or consignee, and with the kind and amount of liquor therein contained. Delivery of such liquors or any part thereof, either by a railroad corporation or by a person or corporation regularly and lawfully conducting a general express business, or by any other person, to any person other than the owner or consignee whose name is marked by the seller or consignor on said vessels or packages, or at any other place than thereon marked, shall be deemed to be a sale by any person making such delivery to such person in the place where such delivery is made.

Section 2 required "every railroad corporation" or person conducting a general express business, receiving such liquors, "or actually delivering

intoxicating liquors to any person or place in a city or town described in section one of this act," to keep a book showing the date of receipt, a correct transcript of the marks required, date of delivery and name of person to whom delivered, the latter signed by the person receiving.

Read with strict literal accuracy, this last sentence of section 1 makes delivery either to any person other than the owner or consignee or at any other place than that marked on the package a sale by the person making such delivery to the person in the place where delivery is made.

However, I am unable to believe that the legislature intended that this act should be so construed. It would seem more reasonable to interpret the sentence to read, "delivery other than to the owner or consignee or at the place thereon marked shall be deemed to be a sale."

It is a matter of common knowledge that railroad corporations in this commonwealth do not deliver freight from house to house or other than at their freight houses or established delivery points. This fact was recognized by the Supreme Court in the case of *Commonwealth v. Mixer*, 207 Mass. 141, 147, *per Rugg, J.*:—

Moreover railroads and street railways, common carriers which do not deliver merchandise to houses or places of business, are exempted from the operation of the statute (St. 1906, c. 421).

It is plain from an examination of St. 1897, c. 271, that it was not intended thereby to prohibit the transportation and delivery of intoxicating liquors in no-license cities or towns by railroad corporations. The first sentence of the section requires that sellers deliver the liquors "to a railroad corporation or to a person or corporation regularly and lawfully conducting a general express business." Obviously, if intoxicating liquors transported by a railroad corporation cannot lawfully come into possession of the consignee, the inclusion of the railroad corporation in the classes of persons to whom the seller might deliver liquors for transportation is an absurdity.

It may be suggested that under this 1897 statute a railroad corporation might transport liquors to its freight station and there turn them over to a person or corporation conducting a general express business, as a connecting carrier, and therefore the reasoning above is inconclusive; but it would seem that such delivery by the railroad corporation is as much within the literal prohibitions of this section as that involved in the present question, and it is also doubtful whether the carting of freight or packages from a freight station to a house in the same town is the transaction of an express business. See *Commonwealth v. Peoples Express Co.*, 201 Mass. 564, 579.

It is only "liquors to be transported *for delivery*" to which this statute applies. Wherever "delivery" is used in this act it seems to refer to the ultimate delivery to the consignee, and it is for that purpose that the seller is to turn them over to either a railroad corporation or to a person or corporation regularly and lawfully conducting a general express business.

It would seem that the clauses of this last sentence were used distribu-

tively, — delivery to the person addressed, applying primarily to the class of carriers first mentioned, to wit, railroads; and delivery at the place designated, applying primarily to those mentioned next, to wit, the express companies. Such application of the words would be in accordance with the well-known practice of each class as to manner of delivery.

Section 2 of the 1897 act, as shown by the quotation therefrom, expressly recognizes that railroad corporations may lawfully perform this service, and further indicates quite clearly that it was not intended to require delivery to the person at the place marked on the package by the seller, but only to compel delivery either to the person or at the place shown.

The language is, — “Every railroad corporation or person . . . conducting a general express business, receiving . . . liquors for delivery, or actually delivering intoxicating liquors *to any person or place* in a city or town described in section one.”

In my opinion this prohibition of the statute is not violated where delivery is made to the consignee in person or at the place marked upon the package as the address of the purchaser or consignee.

Apparently this was the substance of the charge of the presiding justice in the case of *Commonwealth v. Cronan*, 220 Mass. 467. The language of the Supreme Court is as follows: —

The presiding judge in his instructions to the jury carefully and repeatedly stated that the charge against the defendant was keeping intoxicating liquors with intent to sell the same, and after referring to St. 1912, c. 201, and reading it to the jury, pointed out that before a delivery of intoxicating liquors could be deemed to be a sale the delivery must be of such liquors as are referred to in the statutes, and by a person doing a general express business, and that the liquors must have been delivered either to a person other than the owner or consignee whose name is marked on the vessel or package, or to some other place than is marked thereon.

I am aware that there is some language in the opinion in the case of *Rea v. Aldermen of Everett*, 217 Mass. 427, 429, which, taken strictly, would imply an opposite construction, but it seems that the court was not dealing expressly with this point and in my opinion did not intend to pass upon the question here involved.

It has several times been said that —

The act was manifestly intended to meet some difficulties which had been encountered by the government in the prosecution of common carriers for illegal keeping of intoxicating liquors, and to make it more difficult for the guilty to escape detection when setting up the fraudulent defence that the liquors found in the possession of the carrier were for delivery by him as such to some person.

Commonwealth v. Intoxicating Liquors, 172 Mass. 311, 315.

Obviously, the interpretation outlined above in no way violates the purpose of the act as here defined, and the tracing of the liquors from the seller to the real purchaser is as complete where delivery is made to the party in person, designated as the purchaser, as where made at the address specified.

Assuming that this is the correct interpretation of the act as passed in 1897, the later amendments to the particular section have not changed its

effect in this respect. Other acts upon the same subject which have since been enacted can give little light as to the intention of an earlier legislature, and none of them seem at all inconsistent with this construction.

Accordingly, though with some hesitation, I have come to the opinion that delivery by a railroad corporation to the actual person shown upon the package as the purchaser or consignee of the intoxicating liquors is not illegal, by virtue of the provisions of R. L., c. 100, § 49, as amended by St. 1912, c. 201.

Very truly yours,
(Signed) HENRY C. ATTWILL,
Attorney-General.

As the company has indicated its intention of issuing to its agents such instructions with respect to the delivery of liquors into no-license towns as will conform to the opinion of the Attorney-General, the Commission deems it unnecessary to make a specific finding on the application before it, and has placed the petition on file.

For the Commission,

ANDREW A. HIGHLANDS,
JUNE 11, 1917. [P. S. C. 1448] *Secretary.*

Complaint of patrons of the New York, New Haven and Hartford railroad, residing in Mansfield and West Mansfield, asking that train leaving Attleboro, eastbound, at 6.39 P.M. be restored to its former schedule.

Memorandum.

The complainants are employed in the jewelry shops and factories of Attleboro and are released from work at 6 P.M. The present schedule makes it necessary for them to wait more than a half-hour before taking the train to Mansfield. Formerly this train left at 6.26 P.M., instead of 6.39 P.M. as at present, and they wish it restored to the former schedule.

The train in question, No. 3218, starts at Providence and crosses the state line into Massachusetts. It is therefore interstate in character and the jurisdiction of this Commission over its operation is limited. Disregarding this fact, however, and assuming that the company would be willing to adopt any recommendation in the premises that we might make, it does not appear that the change which the complainants desire can reasonably be required.

Under the former schedule the train service out of Providence in the vicinity of 6 P.M. was as follows: —

TRAIN.	Leaving Time.
No. 20, New York-Boston express,	5.58 P.M.
No. 3218, Boston passenger,	6.02 P.M.
No. 4058, Worcester passenger,	6.05 P.M.
No. 3206, Plainville passenger,	6.10 P.M.

Train No 20 runs express between Providence and Boston, and train No. 3218 follows it as a local over the main line. The Worcester and Plainville trains leave the main line at Boston Switch, 4.9 miles from Providence. Owing to the present block signal system, it is very difficult to operate trains out of the Providence station more frequently than every five minutes and it is also necessary for the local Boston train to follow the express, which is not infrequently late. Because of this fact, train No. 3218, under the above schedule, was itself operated very irregularly and also tended to interfere seriously with the prompt dispatch of the Worcester and Plainville trains. For this reason the schedule was changed on March 26, 1916, and is now as follows: —

TRAIN.	Leaving Time.
No. 20, New York-Boston express,	5.58 P.M.
No. 4058, Worcester passenger,	6.05 P.M.
No. 3206, Plainville passenger,	6.10 P.M.
No. 3218, Boston passenger,	6.15 P.M.

As now operated, train No. 3218 is delayed less often itself and does not interfere at all with the Worcester and Plainville trains. It also accommodates to better advantage than before workers in Providence, released at 6 P.M. and desiring to go to Attleboro or other points north of Pawtucket, as well as theatre passengers for Boston. Assuming that it is undesirable to attempt to operate this train out of Providence at 6.02 P.M., as under the schedule formerly in effect, and we think the public disadvantage of this practice is manifest, it can be made to leave earlier only by changing places with train No. 4058 or train No. 3206. Both of these trains make important connections which

would be thrown out of gear if such a course were followed. While, therefore, the complainants have undoubtedly been inconvenienced by the change of schedule, the present arrangement, in the opinion of the Commission, accommodates the public generally better than the former, and the disadvantages of any change which has been suggested would outweigh the advantages.

It has also been urged that train No. 3194, leaving Providence for Boston at 5.20 P.M., might be scheduled later, so that it would accommodate the complainants. This train, however, distributes local passengers between Providence and Boston, arriving at Providence on the New York-Boston express due at 5.10 P.M., and it does not seem that the company can reasonably be asked to delay its leaving time by twenty minutes or more, which would be necessary if the plan suggested by the complainants were adopted.

In view of the facts above stated, the Commission is unable under present conditions to recommend any change in schedule for the better accommodation of the complainants. The evidence indicates, however, that the company ought to consider seriously the question of changing its present block signal system between Boston and Providence. If an automatic signal system were substituted for the present manually operated type, trains could be operated more frequently and to greater public advantage.

For the Commission,

ANDREW A. HIGHLANDS,

MAY 31, 1917. [P. S. C. 1771]

Secretary.

Petition of the New York, New Haven and Hartford Railroad Company for authority to discontinue trains Nos. 1410 and 1431 between Great Barrington and Pittsfield.

This is a petition of the New York, New Haven and Hartford Railroad Company to discontinue the service now furnished between Great Barrington and Pittsfield by trains Nos. 1410 and 1431. Train No. 1410 leaves Great Barrington at 8.30 A.M., reaching Pittsfield at 9.30 A.M., and train No. 1431 leaves Pittsfield at 6.15 P.M., reaching Great Barrington at 7.10 P.M. The operation of these trains was discontinued by the company on October 1, 1915, but the Commission, upon the petition of residents of Great Barrington, required the company, for the reasons

stated in its order dated May 2, 1916, to restore this service (4th P. S. C. Rep., p. 143). The present petition is, in effect, a request for the rescision of that order.

The company introduced evidence to show that a relatively small number of passengers use these trains, but did not attempt to justify their discontinuance upon the ground that their operation is unprofitable or because of the general financial condition of the company. It was claimed, however, that the discontinuance of this service was in accord with the general policy of curtailment of passenger train service on the principal railroads of the commonwealth, which is discussed in detail in the report of the Commission dated June 15, 1917, upon its investigation in the matter of contemplated reduction of passenger train business; that it would make possible certain rearrangements of other service which would result in the elimination of one engine and one train and engine crew; and that this saving in motive power, fuel and labor would enable the company better to meet the extraordinary demands upon its freight service, growing out of present war conditions.

At the present time, two train crews, with headquarters at West Stockbridge, handle the freight and passenger business on the State Line branch of the New York, New Haven and Hartford railroad. One of these train crews also operates passenger train No. 1410 from Great Barrington to Pittsfield and on the return trip does local freight work between Pittsfield and Great Barrington. The other crew, after completing its work on the State Line branch, runs light to Pittsfield and on the return trip operates passenger train No. 1431 from that point to Great Barrington. A third crew, with headquarters at Pittsfield, performs way-freight service between Pittsfield and Great Barrington. The company proposes, by the elimination of passenger trains Nos. 1410 and 1431 and the rearrangement of local freight service between Pittsfield and New York, to save one local crew in Massachusetts. Under the plan proposed, one crew will do the local freight work between Pittsfield and Great Barrington and another crew will be expected to perform all the local freight and passenger work on the State Line branch and also to handle the freight at Rising Siding, a paper industry located on the main line about four miles north of Great Barrington, as the conditions at Rising Siding make it impossible to operate the larger engine which is used in the freight work on the main line.

In view of the large amount of freight business which must be handled on the State Line branch, the Commission is of the

opinion, based upon the report of its inspector in this district, that a single freight crew cannot efficiently handle the entire freight and passenger business upon this branch and also perform the work at Rising Siding. Under these circumstances it is necessary to determine whether such an emergency exists at the present time as to warrant the curtailment of present passenger train service between Great Barrington and Pittsfield and other rearrangements of service incidental thereto which are likely to result in less efficient operation upon another portion of the company's system.

It appears from a report recently filed by the New York, New Haven and Hartford Railroad Company for the month of July, 1917, that the company, in spite of the fact that it was obliged to make 98 special train movements to handle troops and equipment to and from loading and unloading points, found it unnecessary or impracticable to utilize all of the 41 locomotives which were released as a result of the recent reductions in passenger train service. It also appears that the number of engineers, firemen, conductors and trainmen released as a result of the recent passenger-train reductions exceeded the number of similar employees who entered the military service, and, so far as we are advised, the company has not been embarrassed by inability to retain or obtain a sufficient number of such employees to handle all necessary train movements in its freight and passenger service. Moreover, a large number of locomotives and crews which have been used in special summer passenger business to shore and mountain resorts, will now be available for use in the freight service. Upon these facts it would seem that the contentions upon which the company rested its case are not wholly convincing, except to the extent that a shortage in the fuel supply may justify the elimination of the trains in question.

In regard to the matter of fuel, it appears from the company's report that in spite of an increase of approximately 15 per cent in the freight ton miles handled during July, 1917, as compared with the same month of last year, there has been a reduction of about $3\frac{1}{4}$ per cent in the company's total coal consumption. While the coal situation is still serious and the reserve supply below normal, we believe that the measures already taken or in contemplation by the Federal authorities will insure sufficient deliveries of coal to enable the railroad companies of New England to furnish the service which is found to be necessary in the public interest.

On the whole, the Commission is of the opinion that the company has failed to show the existence of such an emergency as

would justify the Commission in authorizing the company to discontinue passenger train service which the Commission, after full hearing a year ago, found to be necessary for the reasonable convenience and accommodation of residents of Great Barrington, more especially if it will indirectly result in less efficient operation of the company's freight and passenger business on the State Line branch.

The evidence presented at the hearing, however, seemed to indicate that no serious opposition would be made to the discontinuance of this service during the summer months for the period of the war. Train No. 257, which leaves Pittsfield at 5.45 P.M. for New York City and operates during the summer season only, affords, during the period of its operation, a reasonable equivalent for the service now furnished by train No. 1431. It is true that those desiring to reach Pittsfield from Great Barrington and intermediate points in the early forenoon would be obliged to rely upon the street railway service or other means of conveyance, but the inconvenience in so doing would be much less at this season than during the winter months, when travel by trolley or automobile is apt to be more onerous and may be entirely interrupted at frequent intervals by the large snowfall in this section of the state. It appears, also, that travel between these points upon the trains in question, except for pleasure riding, is less during the summer months, owing to the fact that most of the courts and schools are not in session. Moreover, from the standpoint of the company and for the more efficient utilization of the resources of the country in the present emergency, the suspension of this service during the summer months would release men and motive power when they are most needed, owing to the increased traffic demands during the seasonal peak of the company's business.

Provided that the special summer service now furnished by train No. 257, or other service reasonably equivalent thereto, is furnished between Pittsfield and Great Barrington, the Commission is of the opinion that the operation of trains Nos. 1410 and 1431 may reasonably, for the duration of the war, be suspended during the summer months, but should be retained for the remainder of the year. This finding, however, is subject to review upon the submission of evidence showing a substantial change in present conditions.

It is therefore

Ordered, That the New York, New Haven and Hartford Railroad Company be hereby authorized to discontinue, so long as

a state of war exists in this country, but during the period of the company's summer schedule only, the service now furnished by passenger trains Nos. 1410 and 1431 between Great Barrington and Pittsfield, provided that other service, substantially equivalent to that now given by train No. 1431, is furnished during such period by the company.

By the Commission,

ANDREW A. HIGHLANDS,

OCTOBER 29, 1917. [P. S. C. 1267]

Secretary.

Petition of Selectmen of Westfield and Westfield Board of Trade, and Selectmen of Southampton, relative to the discontinuance of certain passenger trains upon the New York, New Haven and Hartford railroad.

This petition relates to the discontinuance of two passenger trains on the New Haven and Northampton branch of the New York, New Haven and Hartford railroad, operating between Northampton and New Haven in either direction. The southbound train left Northampton at 10.30, arrived at Southampton at 10.48, Westfield at 11.08 and New Haven at 1.15 P.M. The northbound train left New Haven at 12.15 P.M., arrived Westfield at 2.30, Southampton at 3.41 and Northampton at 3.03 P.M. The present service between Northampton and Westfield is as follows:—

	SOUTHBOUND.			NORTHBOUND.		
	A. M.	P. M.	P. M.	A. M.	A. M.	P. M.
Northampton,	6.30	3.08	5.00 ¹	7.30 ¹	9.58	7.24
Southampton,	6.44	3.27	5.19 ¹	7.44 ¹	10.11	7.38
Westfield,	7.05	3.50	5.35 ¹	8.10 ¹	10.30	7.57

¹ Mixed trains.

Westfield is also served by the Boston and Albany railroad and two electric lines, — one running to Springfield and the other to Holyoke. Southampton has no other railroad or railway service.

From records of the riding on the trains in question, submitted by the company for the week ending July 24, 1916, it appears that an average of 2.5 passengers per day boarded and left these trains at Southampton in both directions. There were no pas-

sengers from Southampton going to points on the line south of Westfield, and there were but two passengers a week into New Haven from points north of Westfield. The southbound train averaged 9 passengers boarding and 5 passengers leaving the train at Westfield, and the northbound train averaged 6.8 passengers boarding the train and 12 passengers leaving.

The petitioners contend that under various legislative enactments relating to the lease and purchase of the road there is a legal obligation upon the railroad to maintain this service; but in our opinion the Public Service Commission law (St. 1913, c. 784) vests full power over service in the Commission notwithstanding such enactments. The petitioners, however, urged that, even if this construction of the law is correct, the Commission in dealing with this petition should take into consideration and give due weight to the general scope and purpose of these enactments and to previous decisions rendered by it and by its predecessor, the Board of Railroad Commissioners, when on previous occasions it was proposed to reduce passenger service on this branch.

From the records submitted by the company there would seem to be no question that these trains have not been and are not now profitable and that their discontinuance would affect comparatively few persons. Under ordinary conditions, the Commission would make its finding solely upon the issue whether the service now furnished on this branch is reasonable, taking into consideration all the facts connected with the lease and subsequent purchase by the New York, New Haven and Hartford Railroad Company. Owing to the war, however, conditions at the present time are extraordinary. In view of the small number of people affected and the necessity for conservation of labor and of fuel, which has been recognized in a general curtailment of passenger service throughout the country, the Commission is of the opinion that it ought not now to order the restoration of these trains. The petition will, therefore, be dismissed upon the understanding that, after the close of the war or when normal conditions are restored, the case may be reopened upon the request of the petitioners.

It is, therefore,

Ordered, That the petition be dismissed.

By the Commission,

ANDREW A. HIGHLANDS,

DECEMBER 5, 1917.

[P. S. C. 1847]

Secretary.

Investigation by the Commission in the matter of contemplated reductions in passenger train service on the Boston and Albany, Boston and Maine and New York, New Haven and Hartford railroads.

Memorandum.

On May 19, 1917, a communication was addressed to the Commission by James H. Hustis, temporary receiver of the Boston and Maine Railroad, calling attention to proposed reductions in passenger train service and stating briefly the reasons prompting the company to such action. A printed schedule followed this communication, indicating the number of trains to be discontinued. While no formal communications were received from the New York, New Haven and Hartford and Boston and Albany railroads, the Commission was given to understand that similar reductions in service were contemplated by both of these companies. Because of this information, the following notice was sent to the managements of all three roads:—

The Commission will ask the operating officials of the New York, New Haven and Hartford, Boston and Maine and Boston and Albany railroads to appear publicly before it on Monday morning, June 4 in order that it may secure from these officials a more complete and detailed statement of the reasons which are leading the companies to make the contemplated sweeping reductions in passenger service.

Public hearings were held on June 4 and June 6.

It should be stated that the statutes do not require the companies to file with the Commission notice of proposed changes in service, as in the case of rates, nor to secure its approval before such changes are made. The practice of the Commission has been, in general, to allow the roads a free hand in this matter and to consider complaints after, rather than before, a new schedule has gone into effect. In the present instance, however, the changes contemplated are so extensive and extraordinary in character that it seemed desirable, before they took place, to ascertain more definitely the reasons which actuated the companies in proposing them. No attempt was made at the hearings to deal with schedules in detail or to consider the propriety of eliminating this or that particular train. The desire of the Commission was chiefly to secure such knowledge of the general situation as would enable it to determine whether or not cause existed for departing from the normal procedure and requiring,

in advance, the modification, postponement or abandonment of the companies' plans as announced.

This is not the first step taken in recent years to curtail passenger service. In 1914 material reductions were made, the effect being shown by the following table of passenger train mileage: —

COMPANY.	1913.	1916.
Boston and Albany,	4,285,387	3,960,475
Boston and Maine,	12,211,748	11,243,635
New York, New Haven and Hartford,	16,753,623	15,157,555

The Boston and Maine now proposes to eliminate about 2,300,000 additional passenger train miles per year, the New Haven about 1,700,000 and the Boston and Albany about 280,000 miles. The advisability of such reductions was suggested to the transportation companies of the country by the chairman of the Special Committee on National Defence, appointed by the American Railway Association to co-operate with the War Department and commonly referred to as the Railroads' War Board, in a communication dated May 2, 1917, as follows: —

The Executive Committee has in mind that the demands upon American railways by the United States and its allies are such that it is conceivable, if not probable, that it will be necessary to reduce some kinds of service so as to make available the maximum transportation energy for moving fuel, food materials and troops necessary for the successful conduct of the war. It is therefore suggested that immediate consideration be given the reduction of passenger train service.

The inconvenience to the government and the public caused by this will be far less than to fail to move all freight regularly and promptly and not to have an adequate fuel supply next winter.

Similar steps in line with this recommendation are, it seems, being taken by railroads elsewhere in the country.

At the public hearing, Mr. Henry B. Endicott, chairman of the Massachusetts Public Safety Committee, appeared in support of the proposed reduction of service and also Mr. Galen L. Stone, vice-president of the New England Coal Committee, as well as representatives of the chambers of commerce of Boston, Lynn, Lawrence and Haverhill, and of certain industries vitally interested in the movement of freight. It is urged that public

convenience and necessity demand the contemplated changes, to state the matter briefly, for the following important reasons:—

(1) In order that the fuel supply of New England may be conserved, and especially the fuel supply of the railroads themselves.

(2) In order that locomotives may be released from the passenger train service for use in the movement of freight.

(3) In order that men may be released from the passenger service for employment in the freight service.

(4) In order that the tracks may, in some degree, be cleared so that delay to freight trains may be avoided.

(5) In order that the companies may be better prepared to move troops and supplies in connection with the proposed training camp at Ayer.

It is a matter of common knowledge that the freight service of New England has been unsatisfactory ever since the fall of 1915, when the pressure of rapidly increasing business began to make itself felt. During the past eighteen months the companies have, in general, been unable adequately to meet the demands imposed by the traffic and a frequent resort to embargoes has been necessary. Congestion, delays and a general shortage of cars have seriously hampered our industries. At the present time the Boston and Albany is the only system practically open to traffic, and both the New Haven and the Boston and Maine companies have found it necessary to protect their lines by embargoes at their western gateways. The Portland and Southern divisions of the Boston and Maine system are comparatively free from congestion, but the Fitchburg Division, more important than either from the freight standpoint, is jammed with traffic. Fewer cars are on the New Haven system than a year ago, but it cannot efficiently handle a greater number and the reduction has been brought about for that reason through the use of embargoes. Resulting from this congestion and from other equally important causes, has been a shortage in the coal supply, accompanied by excessive prices, which has affected all New England industries and has at times actually imperiled railroad operation.

The future holds forth no immediate prospect of relief from these conditions. The lack of adequate facilities for transportation by water, which has been a large factor in the rail congestion, seems likely to grow more acute, especially if lines like the Merchants and Miners should be diverted to the trans-Atlantic service. Traffic in munitions and the export trade is bound to increase. The mobilization of troops at training camps will shortly impose additional burdens upon both freight and passenger serv-

ice. As conditions may develop which will tax the resources of the companies as they have never been taxed before, the seriousness of the situation can hardly be overestimated.

Every reasonable and practicable means of relieving this situation should, of course, be utilized. The roads, for example, will be derelict in their duty if they fail to do everything within their power, with the help of such bodies as the Shipping Board and the Federal Trade Commission or by other means, to secure for themselves and for New England the adequate supply of fuel at reasonable prices which will enable this section of the country effectively to meet the war's demands. It is equally clear that if a reduction in passenger service will appreciably help to relieve freight congestion and to conserve the coal supply, it is a step that ought to be taken and a sacrifice which the New England public can well afford to make, provided the reduction is not carried so far that business and industries suffer therefrom.

How far it may reasonably be expected that such help will be afforded by the changes proposed, the Commission endeavored at the hearings to ascertain. The evidence upon this point was not wholly satisfactory. It is not unfair to say that the statements of the railroad officials were, in general, neither very clear nor very convincing. Conditions at yards, terminals and transfer points are limiting factors in the movement of freight, as well as the supply of engines, cars and labor. It is not entirely certain that passenger locomotives can effectively be used to relieve freight congestion, nor that men will move from one service to the other. On the other hand, the evidence is sufficiently strong to justify a belief that at least *some* relief will be afforded in these ways and by the clearance of tracks, and that there will, at all events, be a substantial saving of coal.

It should be borne in mind, however, that losses in passenger facilities as stated above have already been suffered, and, while the people of New England are prepared to make any sacrifice which present war conditions may reasonably demand, they ought not to be asked to endure further burdens in this direction except in as far as the changes set forth in the new schedules have been made by the railroads in conformity with the principle expressed in an official statement by Howard Elliott of the Railroads' War Board, — "not with the idea of saving money, not with the idea of failing to serve the public, but simply to save man power, fuel and motive power, all of which should be applied to the transportation of necessities."

It is also pertinent to observe that the recommendation of the president of the Railroads' War Board in regard to the reduction of passenger train service, as quoted in an earlier part of this report, is only one of a large number of recommendations made by that board to the railroads of the country with a view of promoting a fuller utilization of their plants and securing more efficient methods of operation, in order to enable them to be of the greatest service to their country in the present national crisis. The Commission hopes and expects that these recommendations in regard to matters which are within the control of the companies themselves, and upon which any substantial betterment of the present freight situation must largely depend, will be followed as promptly and fully as the recommendation in regard to the reduction of passenger train service.

After careful consideration, the Commission is of the opinion that some reduction of the passenger train service at this time is justified, in so far as it can be effected without sacrifice of the vital needs of passenger transportation and in so far as the men and equipment now employed in passenger service are needed and can be effectively utilized for the transportation of food-stuffs, fuel and other commodities with greater speed and regularity and in such volume as the military and industrial needs of the nation may now or presently require; but the extent to which the reductions proposed will contribute to that end or may, on the other hand, result in an unreasonable curtailment of facilities for passenger transportation cannot well be determined in advance.

Under the circumstances of the present emergency, the proposed reductions in passenger service do not appear to be so arbitrary as to justify the Commission in departing from its usual procedure by trying out in advance the various complaints in regard to specific changes in schedule and by requiring the companies to abandon or postpone the adoption of the changes contemplated. The Commission will therefore take no formal action at this time in regard to the proposed reductions of passenger service, but will direct the companies to keep it informed from time to time as to the results in actual operation, in order that it may know definitely the extent to which it proves possible to use in the freight service the men, locomotives and other equipment released from the passenger service, the extent to which coal consumption in the passenger service is curtailed, and, so far as possible, the extent to which the movement of freight is accelerated.

In reaching this conclusion the Commission has been influenced by the fact that the companies have apparently endeavored to exercise a reasonable discrimination in the selection of trains which might best be eliminated, if any reductions are to be made in the present passenger train service. They have professed a desire not to interfere with the movement of labor in morning and evening rush hours and to discontinue in general only trains that are now accommodating comparatively few passengers. Since the changes were first advertised, the Boston and Maine Railroad, after conferences with its patrons, has agreed to restore many trains which it had proposed to discontinue, and similar modifications are still being made by this and by the other companies.

A great many complaints have already been filed with the Commission. Such of these as have not already been adjusted after direct conference with the companies will, in as far as time will permit, be investigated by the inspection department of the Commission. As the result of the information obtained in regard to the number of passengers accommodated by the discontinued trains, the extent to which such passengers may reasonably avail themselves of the service furnished by other trains or by the street railway companies, and other pertinent circumstances and conditions, it is possible that certain of these complaints may be adjusted before the contemplated changes are put into effect and without formal action on the part of the Commission.

It should further be stated that the action of the Commission in allowing the companies the customary right of initiating changes in their schedules is intended in no way to restrict or prejudice the right of patrons of the roads affected to secure a public hearing before the Commission in accordance with the statutes, after such changes have actually gone into effect, and to have their complaints satisfied to such extent as the Commission may, upon the evidence submitted, find to be justified, and shall prescribe by formal orders to the companies.

By the Commission,

ANDREW A. HIGHLANDS,

JUNE 13, 1917. [P. S. C. 1772]

Secretary.

STREET RAILWAY FARES.

Petition of the Bay State Street Railway Company for approval of the giving of free transportation for certain charitable purposes.

After consideration, — it is

Ordered, That under the provisions of section 18 of chapter 784 of the Acts of 1913, and in accordance with the memorandum of the Commission dated August 6, 1914 (P. S. C. 451), the Commission hereby approve of the giving by the Bay State Street Railway Company, during the year 1917, of free or reduced rate transportation for charitable purposes to certain institutions and agencies specified in the schedule accompanying, and on file with, the petition dated June 22, 1917.

Attest: ANDREW A. HIGHLANDS,
JUNE 28, 1917. [P. S. C. 1802] *Secretary.*

Notice of the Union Street Railway Company of proposed discontinuance of special monthly commutation tickets upon its railway between New Bedford and Fall River.

It appearing that the Union Street Railway Company has filed in this office a schedule numbered M. P. S. C. No. 2, Supplement No. 1, showing proposed discontinuance of special monthly commutation tickets upon its railway between New Bedford and Fall River, effective August 20, 1917, and that in the opinion of the Commission public notice thereof should be given, — it is

Ordered, That the Union Street Railway Company be required to give public notice of said proposed discontinuance of special monthly commutation tickets by posting notice thereof at least ten days prior to August 20, 1917, in a conspicuous manner in its waiting-rooms and cars; by publication hereof twice prior to said date in the New Bedford Evening Standard and Fall River Herald and by serving a copy hereof at least ten days prior to said date on the cities of New Bedford and Fall River, and to make return to this Commission of its compliance with the foregoing requirements on or before August 19, 1917.

And it is

Further ordered, That a copy of this order be filed with said schedule at the office of the Commission and that a copy hereof be forthwith served upon the Union Street Railway Company.

Attest: ANDREW A. HIGHLANDS,
JULY 24, 1917. [P. S. C. 1839] *Secretary.*

STREET RAILWAY TRANSFERS.

Petitions of the Selectmen and citizens of Groveland relative to transfer limits of the Bay State Street Railway Company in said town.

In the report and order issued on July 3, 1917, the Commission permitted the Bay State Street Railway Company, during an experimental period of six months, to increase its fare to 6 cents in the cities where the rate had theretofore been 5 cents, thus sanctioning an agreement reached between the company and counsel for most of the communities affected. It was further provided by the Commission, in accordance with this agreement, that tickets should be sold at the rate of 20 for \$1.00, good at all times except on Saturdays after 1 P.M., Sundays and holidays; but on certain lines, where the distances were long, the limits within which these tickets might be used were restricted and similar restrictions were made in the case of transfer limits. It was agreed that the use of the tickets should be confined, in general, to the thickly settled urban districts and that transfer privileges might fairly be limited in a similar manner. As there was a difference of opinion, however, in regard to the exact application of this principle in various cases, the Commission approved the schedule submitted by the company with the understanding "that any patrons of the company within its present 5-cent territory who would be precluded from the use of the proposed 20-ride tickets should have the right, without prejudice, upon a petition at any time hereafter brought, to secure the determination of the Commission as to whether such tickets ought reasonably, having in mind the general principles of the plan adopted, to be made available for their use, and that a similar opportunity should be open with respect to transfer privileges curtailed."

The pending petitions were brought in accordance with this understanding. The lines of the Bay State Street Railway Company in Haverhill radiate from the transfer station located at the junction of Main and Merrimac streets in the heart of the city. The 6-cent fare limit upon one of the lines in question is at the Groveland-West Newbury town line, 4.34 miles from this transfer station, and upon the other it is located at the Groveland-Georgetown town line, a distance of 5.11 miles. Formerly the transfer limits were the same, but now they are located in the one case at the Pines turnout, a distance of 3.08 miles from

the center, and in the other at the Haverhill-Groveland town line, a distance of 2.67 miles, and the ticket limits are the same. This means that any passenger obliged to change cars at the transfer station must pay a second fare unless he began his ride within the transfer limits, in which case he is entitled to a transfer good on any other line radiating from the center as far as the transfer limit on such line. The petitioners ask that the transfer limit in one case be extended to the Savoryville turnout, a distance of .71 miles from the present limit at the Pines turnout, and in the other to Parker's turnout, a distance of .58 miles from the present limit at the Haverhill-Groveland town line.

The limit at the Pines turnout, it seems, falls just short of the settlement in Groveland called Savoryville, and the limit at the Haverhill-Groveland line likewise falls short of the settlement called South Groveland, which centers at Parker's turnout. The petitioners claim that the result of the present arrangement is that transfer passengers to Savoryville and South Groveland in general leave the car at the present transfer limits and walk the comparatively short distance to their homes. It is urged that if the limits were extended to the points now specified by the petitioners the receipts of the company would not be appreciably diminished and its patrons would be greatly inconvenienced. The company did not seriously dispute this statement, but rested its case upon the fact that the present transfer limits have been established substantially in accordance with the general agreement reached last July, and that any marked departure from this general principle would constitute a dangerous precedent.

In the agreement then reached the understanding appeared to be that the same principle should apply to transfer privileges as to the sale of 5-cent tickets; that existing transfer privileges should be retained in those towns or portions of towns which by location or density of population practically form a part of adjacent urban centers; and that in territory other than that described, transfer privileges might be curtailed by the relocation of transfer limits which permitted too long a ride for the basic fare. A suggestion that transfer privileges should in general extend for a distance of about two and a half miles from the centers of the urban districts was also considered, but it does not appear that this suggestion was adopted either by the company or the remonstrants. The schedules filed by the company pursuant to the agreement provided for free transfer privileges which, in most cases, covered distances of more than two and a half

miles from the centers of the respective cities. The whole scheme of transfer privileges was apparently worked out with some elasticity, and transfer points were in general determined by the conditions and circumstances of each particular case rather than by any arbitrary rule of distance or other fixed standard. It seems to us that the same practical considerations should govern in the present case, especially as no general rule with reference to changes in transfer privileges was laid down by the Commission in its report and order in the rate case.

If the petition were granted, the transfer limits upon the lines in question would extend 3.79 miles and 3.45 miles, respectively, from the center of Haverhill. So far as the matter of distance is material, the transfer privileges which would then be available do not appear to be greater than on many other lines of the Bay State Street Railway Company. If, however, the evidence showed that the company would be likely to lose a substantial amount of revenue, we should be unwilling, under the circumstances, to require any change in existing transfer privileges during the six-months' period that the present arrangement is to remain in effect. But when the company practically concedes that the petitioners are right in contending that receipts would not be appreciably diminished, it seems that the Commission would not be justified, because of any abstract considerations, in denying their request. Nor would the precedent be serious if confined in its application to cases where the facts were similar.

It is therefore

Ordered, That the Bay State Street Railway Company, within ten days of the date hereof and upon not less than five days' notice to the Commission and the general public, be hereby required to amend its present tariff by filing a supplementary tariff extending the transfer limit now located at the Pines turnout in the town of Groveland to the Savoryville turnout in said town, and by extending the transfer limit now located at the Haverhill-Groveland town line to Parker's turnout in said town of Groveland.

By the Commission,

ANDREW A. HIGHLANDS,

OCTOBER 10, 1917.

[P. S. C. 1869]

Secretary.

STREET RAILWAY SERVICE.

Petition of Bay State Street Railway Company for approval of proposed changes in service on its Rockland-Braintree route.

Petition of Bay State Street Railway Company for approval of proposed changes in service on its Lowell-Reading route.

Petition of Bay State Street Railway Company for approval of proposed changes in service on its Malden-Revere route.

Petition of Selectmen of Rockport relative to restoration of previous schedule of service on the Bay State street railway between Pigeon Core and Gloucester.

Petition of Municipal Council of Gloucester relative to restoration of previous schedule of service on the Bay State street railway between Gloucester and Bay View and Lancenville and Pigeon Core in the town of Rockport.

Petitions of Selectmen of Rowley and of Ipswich relative to restoration of previous schedule of service on the Bay State street railway in the said towns.

Petitions of Bay State Street Railway Company for approval of changes in service on its Ipswich-Junction-Ipswich route and on its Ipswich-Newburyport route, and for permission to establish reasonable white pole stops in the town of Rowley.

These petitions all involve reductions in service which have been made, or which it is proposed to make, on routes operated by the Bay State Street Railway Company. The reasons advanced for these reductions are similar in all cases. They are phases of a single plan and have therefore, for convenience, been considered together. Summarized briefly, the changes made or proposed are as follows: —

(1) *Rockland-Braintree Route.* — This route is 9.57 miles long and extends from Rockland Center through the town of Weymouth to the railroad station in Braintree. During a portion of the day through cars are operated over this route, but for the most part they terminate at Lincoln square, Weymouth, where passengers are transferred to and from cars operating between Braintree depot and East Weymouth.

For a number of years half-hour service has, in general, been furnished throughout the entire day over this route in both directions, the interval between trips early in the morning and late in the evening being slightly longer. It is now proposed to reduce this service by providing, Mondays to Fridays inclusive, hourly service during the time when traffic is light, — in other words, during the normal hours of the day as distinguished from the rush hours. Leaving Rockland, this hourly service would extend from

8 A.M. to 4 P.M. and again from 8 P.M. to 11 P.M. Leaving Braintree, it would extend from 7.05 A.M. to 3.05 P.M. and from 7.05 P.M. to 10.05 P.M. On Saturdays, the hourly service would extend, leaving Rockland, only from 8 A.M. to 2 P.M., and, leaving Braintree, from 7.05 A.M. to 1.05 P.M. On Sundays, the present service would be retained throughout the entire day. Apparently the company desires to continue the reduced service throughout the entire year, in the summer as well as in the winter months.

In the winter of 1910-11, it seems the company attempted to establish on this route an hourly service similar to that now proposed. The matter was brought to the attention of the Board of Railroad Commissioners and its finding was as follows (43d Annual Report, pp. 134, 135):—

The winter schedule of the Old Colony Street Railway Company has reduced the number of cars operated through the town of Weymouth on the "Braintree-Rockland" line, so called. The petitioners allege that this reduction of service is an inconvenience to the public, and inadequate. The company presents a return of riding under the reduced schedule and urges that the present schedule is adequate.

While the issue is a close one, the Board is of opinion that it ought not to disturb the existing schedule, in view of the assurances of the company that the old service will be restored in the spring, when the summer schedule goes into effect.

The Board, however, is of opinion that the number of cars under the summer schedule of 1911 should not be reduced at the close of the season until it has had a full opportunity to study further the riding under that schedule after the summer riding decreases, and, therefore, recommends to the company that, after the restoration of its summer service in Weymouth upon the Braintree-Rockland line, it be continued until further action by the Board, the petitioners and the company having the right to bring the matter again to its attention upon the petition now before it.

In view of this finding, the company has petitioned the Commission for approval of the proposed change, and has deferred carrying it into effect pending consideration of this petition.

(2) *Lowell-Reading Route.*— This route is 14.43 miles long and extends from Merrimac square, Lowell, through Tewksbury and Wilmington to Reading square, being part of one of the through lines from Lowell to Boston. The distance between Chandler's turnout in Tewksbury and Reading square, the portion of the route affected by the proposed reduction in service, is 9.17 miles.

For a number of years half-hourly service has been furnished between Lowell and Reading in both directions throughout the entire day. It is proposed to maintain this service between Lowell and Chandler's turnout, but to operate cars but once an hour, during normal hours, between the latter point and Reading square. Mondays to Fridays, inclusive, this hourly service would extend, leaving Reading, from 7.45 A.M. to 2.45 P.M. and again from 6.45 P.M. to 9.45 P.M., and, leaving Chandler's turnout, from about 7.10 A.M. to 2.10 P.M., and from about 6.10 P.M. to 10.10 P.M. On Saturdays, the hourly service would extend, leaving Reading, from 7.45 A.M. to 12.45 P.M., and again from 6.45 P.M. to 9.45 P.M., and, leaving Chandler's turnout, from about 7.10 A.M. to 12.10 P.M. and from about 6.10 P.M. to 10.10 P.M. On Sundays, half-hourly service would be provided,

leaving Reading, from 8.45 A.M. to 9.45 P.M. and, leaving Chandler's turn-out, from about 8.10 A.M. to about 9.10 P.M. It is the company's plan to continue this reduced service from October 22 to May 15, the former service being resumed in the summer months.

Complaint as to service on this route was made to the Board of Railroad Commissioners in 1912, and the company at that time agreed to "inaugurate a half-hourly service from Lowell to Tewksbury, via Chandler's turn-out, from 6.45 P.M. to 9.45 P.M., instead of the hourly service heretofore given," and to make certain other minor changes (44th Annual Report, p. 119). No order was entered by the Board and the complaint related very largely, it appears, to service which will not be affected under the proposed new schedule. Because of this adjustment of 1912, however, the company has petitioned the Commission for approval of the new service and has deferred carrying it into effect pending the consideration of this petition.

(3) *Malden-Revere Beach Route.* — This route is 5.49 miles long and extends from the Boston and Maine (Western Division) station in Malden, through Maplewood and Linden to Broadway, Revere, and thence to Revere Beach.

For a number of years half-hourly service has been furnished over the entire route during the summer months and between the Western Division depot in Malden and Broadway, Revere, during the remainder of the year. It is now proposed to reduce this service on weekdays by running but once an hour during normal hours. This hourly service would extend, leaving Malden depot, from 8.30 A.M. to 4.30 P.M. and again from 7.30 P.M. to 10.30 P.M., and, leaving Broadway, Revere, between 9 A.M. and 4 P.M. and between 8 P.M. and 10 P.M. On Sundays the half-hourly service will be maintained as at present. It is further proposed that this reduced service shall be in effect between October 22 and May 15, half-hourly service being resumed in the summer months.

This very service was, it seems, considered by this Commission in 1914, the report and order reading as follows (2d Annual Report P. S. C., pp. 236, 237): —

This petition was heard on February 11 and 25, 1914. The Commission recognizes the right of a company to change its schedules of service in accordance with the demands for travel, and the discontinuance of cars may at times be justified as a legitimate economy. While travel over a portion of the Malden square and Revere line of the Bay State street railway is not heavy, it was shown at the hearing that there is a substantial use of it made by people who desire to ride between Malden square and Linden, and the Commission is of opinion that the company should restore the service which it has recently discontinued.

It is therefore

Ordered, That the Bay State Street Railway Company be hereby required to restore forthwith the service on its railway between Malden square and Revere via Linden.

Because of this order the company has petitioned the Commission for approval of the proposed change in service, and has deferred carrying it into effect pending consideration of this petition.

(4) *Gloucester-Rockport Route.* — This route is a circuit about 17 miles long, running from Rocky Neck in Gloucester through the city and around Cape Ann, passing through Rockport and returning again to Gloucester.

For a number of years half-hourly service has been furnished throughout the day over the entire route in both directions. On October 29, 1916, the running time around the circuit was decreased 15 minutes and service was at the same time readjusted so that cars should run in either direction but once an hour between Pines Turnout (near Bay View) and the small loop in Rockport, a distance of 5.23 miles, except during the morning from 5 A.M. to 7.30 A.M. and during the evening from 3.30 P.M. to 6.30 P.M., when the half-hour service is retained. On Saturdays, also, it is retained throughout the entire evening. It is the company's plan to continue this reduction in service from November 1 to May 31, to make a partial reduction during the period between September 15 and November 1 and during the month of June, and to restore the full half-hour service during the rest of the year.

Soon after service was thus reduced, petitions were filed with the Commission by the Selectmen of Rockport and the Municipal Council of Gloucester seeking the restoration of the former service.

(5) *Dummer Academy-Ipswich Junction Route.* — This route is 11.58 miles long and extends from Dummer Academy, Newbury, at a junction with the line from Haverhill to Newburyport, through Rowley and Ipswich to a junction in Hamilton with the line between Beverly and Gloucester.

For a number of years hourly service has been furnished over this route throughout the day, in both directions, and half-hourly service during the summer months on that portion of the route between Ipswich Junction and Ipswich. On November 27, 1916, service was reduced on weekdays so that cars would run but once every two hours during normal hours. This reduced service extended, leaving Dummer Academy, from 8 A.M. to 2 P.M. and again from 8 P.M. to 10 P.M., and leaving Ipswich Junction, between 9.05 A.M. and 3.05 P.M. and again from 7.05 P.M. to 9.05 P.M. On Saturdays the hourly service was maintained during the evening and on Sundays it was maintained throughout the entire day. No notice was given of any change in this reduced service during the summer months. Coincident with the reduction of service, the company established a system of white pole stops along the route in Rowley. Previously there had been no such system.

Soon after this change was announced, the selectmen of Rowley and Ipswich petitioned for a restoration of the former service. At the hearing on December 1, 1916, it developed that the original location grant in Rowley contained, among others, the following provisions: —

The said company shall run cars each way through said Rowley as often as once in each hour between the hours of 6 A.M. and 10 P.M.

On that portion of the railway of said company, within the Town of Rowley, between Ipswich and Rowley Town boundary line, on the south, and Towns-end Bridge in said Rowley on the north, each and every car for the convenience of

passengers passing over such portions operated therein shall be stopped for any passenger to alight from such car, or for any person to get on or off such car, at whatever place or places on such portion of railway such passenger or person shall indicate or desire.

The similar grant in Ipswich contained the following provision:—

The Street Railway Company guarantees to give the town of Ipswich the same service that they now give or shall hereafter give to the cities of Gloucester and Beverly.

In Gloucester and Beverly there is no service with more than hourly headway between cars.

Counsel for the towns argued that, assuming the legal right of the Commission to permit service in violation of the terms of these location grants, the company had no right to disregard these terms without securing the prior approval of the Commission. To meet this contention, the company restored the former service and filed petitions for approval of the change in service desired and also for approval of the system of white pole stops installed.

In making the reductions in service above described, the company urges that it is merely following a suggestion made by the Commission in its report in the so-called Bay State rate case, decided August 31, 1916. In connection with that case, the Commission employed Mr. Bion J. Arnold of Chicago to investigate the Bay State system, with a view to determining to what extent improvements and economies in present methods of operation were feasible. In his report, Mr. Arnold referred to possible reductions in service as follows:—

The traffic of the Bay State Street Railway Company is subject to a wide seasonal variation, to which variation the service is not well adjusted, the consequence being over-service during certain portions of the day or year, as the case may be. It is estimated that a reasonable service adjustment should effect a saving of from \$82,000 to \$135,000 per year.

In considering this suggestion the Commission said:—

Changes in service of this character are particularly calculated to arouse public opposition. The company states that it would be glad to co-operate in such a step towards economy, but seems to have little confidence in its feasibility (Record, p. 4878). Reduction of service in short-haul urban territory is very doubtful wisdom, but Mr. Arnold had in mind the longer interurban lines. Careful study of conditions would be essential in making such readjustments, but the patrons of lines where the traffic is very light cannot reasonably expect a frequent service. The Commission thinks it quite probable that there may be routes where a lengthening of headway at certain seasons of the year would be both justifiable and expedient.

This particular method of economy was not one, it will be noted, upon which the Commission laid great stress, and it was aware of its uncertainties and disadvantages. In the cases now under consideration, the service which has been reduced, or which it is proposed to reduce, is of long standing, and during the years in which it has been in effect the population served has increased—in some cases rather rapidly. In view of this fact, there is a strong presumption against the reduction, as the remonstrants have very clearly and vigorously pointed out. This presumption, however, is not absolute, nor one which the Commission can allow to stand in the face of valid evidence indicating that the change is just and reasonable.

The company has endeavored to supply such evidence by records and observations showing the traffic upon the lines in question, and this evidence has been supplemented in each instance by similar observations, independently made since the hearings were closed, by the Inspection Department of the Commission. After a careful consideration of these records and of the evidence submitted by the remonstrants, the Commission is satisfied that the proposed reductions can be made, at least during the winter months, without any overcrowding of cars, in the hours to which the reductions are applicable, and without causing passengers to stand, except on extraordinary occasions. This conclusion is borne out by the experience on the Gloucester-Rockport route, where the reduced service has already been put into operation. The question at once arises, however, whether satisfaction on this point is sufficient ground for approval by the Commission. A street railway company cannot, of course, expect that its cars will always be filled or that every trip will be a paying trip. What is a reasonable standard of service and do these arrangements conform to such a standard?

This is a question the answer to which is very largely dependent upon circumstances. If the Bay State company were in a prosperous financial condition, it might be its duty to furnish service in excess of traffic demands, merely for the sake of adding to the public convenience; but its present financial condition clearly does not justify such a course. The same principle, however, may be applied to particular routes. It has, indeed, been very strongly urged by the remonstrants that, if a route is profitable, taking its business as a whole throughout the year, service which has been customary for many years ought not to be reduced merely because traffic is light in certain seasons of the year or during certain hours of the day.

The Commission appreciates the force of this contention, but upon examination of the evidence it does not appear that it has application in the cases now under consideration. In the recent fare case, the Commission found that the company needed, for the year ended June 30, 1914, average gross receipts of about 33 cents per car mile to meet operating expenses, provide adequately for depreciation, pay taxes and secure a return of 6 per cent upon the amount of capital honestly and prudently invested in the railway property. In the same year the average operating expense per car mile for the entire system was 20.13 cents and the actual gross receipts averaged 30.11 cents per car mile. Upon the routes now under consideration, the receipts per car mile for the years ended June 30, 1914, June 30, 1915, and June 30, 1916, were, it seems, as follows:—

ROUTE.	1914.	1915.	1916.
	Cents.	Cents.	Cents.
Rockland-Braintree,	21.37	20.32	20.83
Lowell-Reading,	22.34	22.02	23.14
Malden-Revere,	22.84	21.06	20.59
Gloucester-Rockport,	25.81	24.74	24.85
Dummer Academy-Ipswich Junction,	17.41	18.04	17.07

In the case of the Rockland-Braintree route, it was argued by the remonstrants that the above figures are misleading and that a certain portion of the earnings of the East Weymouth-Braintree line ought fairly to be included. Calculations by the Inspection Department of the Commission, upon the basis of traffic observations, however, indicated that with this modification the gross earnings of the route would only be increased to 22.27 cents per car mile in 1914, to 21.17 cents in 1915, and to 21.73 cents in 1916. There seems no escape from the conclusion that the routes in question are not to be classed as profitable routes, although most of them pay operating expenses and some of them pay their fair share of fixed charges. Nor does it appear that the recent increase to a six-cent fare which has been made upon all of these lines, except the Malden-Revere and part of the Lowell-Reading, is likely, in the immediate future at least, to disturb this conclusion. The evidence does not indicate any very substantial increase in earnings upon these lines since the fare was raised, and such increase as there has been has been offset by the advancing cost of labor and of materials.

If these routes were short lines in thickly-settled urban territory, where walking is an easy alternative to riding in the cars, the economy of any reduction might be open to very serious question. As the Commission said in the passage from the Bay State rate case, above quoted, "reduction of service in short-haul urban territory is very doubtful wisdom." But these routes are comparatively long, and operate, with the possible exception of the Malden-Revere line, in country districts which are not thickly settled. While the company may, and doubtless will, lose some traffic from the reduction in service on these lines, it seems probable that the change will result in a net saving. Upon the Malden-Revere line special conditions prevail, due to the operation of various routes over the same tracks, which are of importance in determining whether the proposed reduction is reasonable. These conditions were described by the Inspection Department as follows: —

. . . The portion of this line between Malden square and Broadway, Malden, is double tracked, one track being owned by the Boston Elevated and the other by the Bay State Street Railway, company. Therefore, people residing in this vicinity are served by the cars of both companies and even during the hours of reduction on the Bay State street railway would receive an average service of about seven minutes headway. The portion of the line between Broadway, Malden, and Linden is single track, owned by the Bay State Street Railway Company. This section is also served by cars of this company running between Malden and Salem, which, during the proposed reduction of service, would result in three cars each way per hour between Linden and Malden square.

The portion of the line between Linden and Broadway, Revere, is single track. On this portion, in addition to the cars running between Malden and Revere, there is a line of cars operated between Saugus Center and Boston, which would result during the proposed reduction of service in three cars each way each hour between Linden and Broadway, Revere. At Linden, transfers are issued which enable passengers to travel in any direction from that point.

The Commission has endeavored to discover how common hourly service is upon street railway lines in Massachusetts, using the Bay State, Middlesex and Boston, Worcester Consolidated and Springfield systems as tests. It appears that the Bay State company has such service in effect during the winter months, throughout the day or during a portion of the day, upon 30 different routes, not including any cases which are now under consideration by the Commission. The Middlesex and Boston has three such lines, the Springfield company has eight, and the

Worcester Consolidated has fourteen. From these statistics it is clear that hourly service is not unusual, and that it has been accepted by the public, in many cases, as a reasonable standard of service on country lines. It is difficult, also, to draw any valid distinction between many of these routes and the routes now in question.

In considering these cases it is desirable to have clearly in mind the situation by which the Bay State company is confronted. At the public hearings much time was taken by the remonstrants, aside from the discussion of the direct issue raised, in protesting against the character of the service which the company is furnishing. Without doubt there is just ground for complaint. Much of the rolling stock is antiquated in type and in generally poor condition. New cars are badly needed. In many places track and overhead wires are in need of reconstruction and the power distribution system ought to be augmented. To a certain extent, no doubt, the service can be improved without the investment of additional capital. In the Gloucester district, for example, complaints were frequent and the Inspection Department of the Commission, after a thorough examination of the equipment, made recommendations to the management with a view to more frequent inspection and a higher standard of maintenance, which have resulted in some improvement. The department, however, reports that much of the trouble cannot be cured except by the purchase of entirely new cars, and this is true all over the system. Really good service cannot be expected until many thousands of dollars have been expended upon the property.

In this situation the company finds it difficult to raise the funds which are needed and it is also faced by rapidly increasing prices for both labor and materials. Although, for instance, new feeders ought to be provided for its power supply, the present price of copper is so abnormally high that it is a serious question whether any large quantity ought now to be purchased even if funds were available, and much the same may be said of cars. The situation is unfortunate, but so long as it exists it calls for patience and forbearance on the part of patrons of the road, and every reasonable effort of the company to economize in management and operation ought to be encouraged.

The reductions in service which are now under consideration are but one minor part of the program with this end in view which was suggested by the Commission in its decision in the rate case and which the company is endeavoring to inaugurate

all over its system, in the urban territory as well as in the country districts. Since the decision was rendered, for example, 25 per cent of the white pole stops throughout the system have been eliminated and the scheduled speed has in several important instances been increased in order that the number of car hours operated might be reduced. This has been done on all the lines terminating at Scollay square, Boston, in Fall River, in Gloucester, in Chelsea and Lynn, and further studies are now in process having in view a re-routing of cars in the city districts to accomplish the same purpose.

After a careful consideration of the facts and circumstances, therefore, the Commission, although it is of the opinion that reduction in service is the method of economy which is least to be encouraged, does not find itself able to reach the conclusion that the reductions now in question, with one exception which is noted below, are at present unreasonable, if confined within proper limits. In reaching this conclusion it has taken into consideration the evidence in regard to the particular conditions surrounding each route, including train connections and the convenience of school children and factory employees. While some inconvenience in these respects will result from the changes in service, we are satisfied, as a result of the observations of the Inspection Department, that it will be of minor consequence. The one exception to the general conclusion is the Dummer Academy-Ipswich Junction route, where two-hour service is proposed. While the traffic on this route is light and its earnings very meager, the Commission is not prepared as yet to hold that, if a street railway line is to be operated at all, so infrequent a service ought to be permitted as a two-hour headway would mean.

As indicated above, the reductions ought also to be confined within reasonable limits. On all of the lines in question, except the Rockland-Braintree line, traffic is very much heavier in the summer months than in the winter. The company has recognized this fact and proposes in such cases to restore the half-hour service during the period of heavy traffic. The Commission, however, is not satisfied that the company has in all cases set the right limits for such restoration, and believes that a reasonable rule is that the half-hourly service should be in operation on all the aforesaid routes, except the Rockland-Braintree route, during the period from the first day of May to the first day of November. In the orders entered below, approving the various reductions, this rule has been followed.

While, however, the Commission has felt, for the reasons already given, that it ought to approve all but one of the reductions in service which are in question, it should not be understood that this approval is necessarily final. If, upon actual trial, it should develop that any of the reductions is causing overcrowding of cars or that modifications may reasonably be made to promote public convenience, it will feel free to reconsider its present finding without prejudice and to make such further orders as the situation may seem to demand. In the case of the Gloucester-Rockport line, one important modification of the original plan has already been made, at the instance of the Inspection Department, by extending the operation of the half-hourly service from the end of the Rockport loop to Beach street, the end of the fare limit in the same town, and changes for the better accommodation of the public were made in the white post stops on the same route. The Commission is also of the opinion that the communities in which the service is thus reduced have a reasonable right to expect that they will receive some compensation in the form of improved service, — that, for example, the cars will be kept clean and in good repair, that they will be operated with reasonable conformity to schedule, and that overcrowding in rush hours will be reduced to a minimum. It is, of course, impossible to avoid occasional excess loading of cars, but on lines like these under consideration such loads should clearly be exceptional and not the rule. The Commission realizes that the company is at present suffering from general shortage of equipment, but, when the new cars which have been ordered begin to arrive, this difficulty will have less force. The Inspection Department has been directed to keep the lines upon which service has been or is to be reduced under special observation and to inform the Commission if it appears at any time that the company is not doing all that it can reasonably be expected to do, with the funds at its command, to maintain proper facilities.

No question of law was raised in connection with these cases upon which it is necessary for the Commission to pass, except the force and effect of the restrictions in the original location grants in the towns of Rowley and Ipswich. While these restrictions relate to service and not to fares, it seems to the Commission that they are covered by the principle laid down in the so-called Arlington case (*Board of Survey of Arlington v. Bay State Street Railway Company*, 224 Mass. 463), and that the Commis-

sion has authority, under the provisions of the Public Service Commission Act of 1913 (St. 1913, c. 784), to make such rules or regulations or other orders with respect to service as are just and reasonable, notwithstanding any restrictions which may be contained in these grants. In the matter of the installation of white pole stops in the town of Rowley, the selectmen of that town have stated that, if the Commission rules that the company has the legal right to locate and maintain such a system within the limits of the town, the present arrangement will prove satisfactory. The Commission has, therefore, in an order entered below, given the desired approval.

ORDERS.

Petition of the Bay State Street Railway Company for approval of proposed changes in service on its Rockland-Braintree route.

After a hearing and further consideration, it appearing that the Commission, on the date hereof, has made and filed a report containing its findings of fact and conclusions in regard to the subject matter of this petition, which said report is hereby referred to and made a part hereof, — it is

Ordered, That the approval of the Commission be hereby given to the proposed change in service on the Rockland-Braintree route, operated by the Bay State Street Railway Company, as shown in the schedule on file with and annexed to the petition. [P. S. C. 1538]

Petition of the Bay State Street Railway Company for approval of proposed changes in service on its Lowell-Reading route.

After a hearing and further consideration, it appearing that the Commission, on the date hereof, has made and filed a report containing its findings of fact and conclusions in regard to the subject matter of this petition, which said report is hereby referred to and made a part hereof, — it is

Ordered, That the approval of the Commission be hereby given to the proposed change in service on the Lowell-Reading route, operated by the Bay State Street Railway Company, as shown in the schedule on file with and annexed to the petition, upon condition, however, that the service now in effect shall be resumed upon the first day of May and be continued to the first day of November in this and each succeeding year, unless otherwise ordered. [P. S. C. 1539]

Petition of the Bay State Street Railway Company for approval of proposed changes in service on its Malden-Revere route.

After a hearing and further consideration, it appearing that the Commission, on the date hereof, has made and filed a report containing its findings of fact and conclusions in regard to the subject matter of this petition, which said report is hereby referred to and made a part hereof, — it is

Ordered, That the approval of the Commission be hereby given to the proposed change in service on the Malden-Revere route, operated by the Bay State Street Railway Company, as shown in the schedule on file with and annexed to the petition, upon condition, however, that the service now in effect shall be resumed upon the first day of May and be continued to the first day of November in this and each succeeding year, unless otherwise ordered. [P. S. C. 1541]

Petition of Selectmen of Rockport relative to restoration of previous schedule of service on the Bay State street railway between Pigeon Cove and Gloucester.

Petition of Municipal Council of Gloucester relative to restoration of previous schedule of service on the Bay State street railway between Gloucester and Bay View and Lanesville and Pigeon Cove in the town of Rockport.

After a hearing and further consideration, it appearing that the Commission, on the date hereof, has made and filed a report containing its findings of fact and conclusions in regard to the subject matter of these petitions, which said report is hereby referred to and made a part hereof, — it is

Ordered, That the Bay State Street Railway Company in this and each succeeding year, unless otherwise ordered, shall resume, on the first day of May, the service which was in effect on its Gloucester-Rockport route prior to the twenty-ninth day of October in the year nineteen hundred and sixteen, and continue said service until the first day of November. [P. S. C. 1572, P. S. C. 1573]

Petitions of Selectmen of Rowley and of Ipswich relative to restoration of previous schedule of service on the Bay State street railway in said towns.

After a hearing, it appearing that the Bay State Street Railway Company, on the first day of December, 1916, voluntarily

restored the schedule of service on its routes in the towns of Rowley and Ipswich which was in effect prior to the twenty-seventh day of November, 1916, as desired in these petitions, and that no further action by the Commission is necessary, it is

Ordered, That the petitions be placed on file. [P. S. C. 1591]

Petition of Bay State Street Railway Company for approval of proposed changes in service on its Ipswich Junction-Ipswich route.

After a hearing and further consideration, it appearing that the Commission, on the date hereof, has made and filed a report containing its findings of fact and conclusions in regard to the subject matter of this petition, which said report is hereby referred to and made a part hereof, it is

Ordered, That the petition be dismissed. [P. S. C. 1607]

Petition of Bay State Street Railway Company for approval of proposed changes in service on its Ipswich-Newburyport route, and for permission to establish reasonable white pole stops in the town of Rowley.

After a hearing and further consideration, it appearing that the Commission, on the date hereof, has made and filed a report containing its findings of fact and conclusions in regard to the subject matter of this petition, which said report is hereby referred to and made a part hereof, it is

Ordered, That so much of said petition as relates to changes in service on the Ipswich-Newburyport route, operated by the Bay State Street Railway Company, be dismissed, but that the approval of the Commission be hereby given to the establishment by said company of reasonable white pole stops in the town of Rowley. [P. S. C. 1607]

By the Commission,

ANDREW A. HIGHLANDS,

Secretary.

MARCH 1, 1917. [P. S. C. 1538, 1539, 1541, 1572, 1573, 1591, 1607]

Petition of the Road Commissioners of the town of Dracut and others relative to the condition of roadbed and rails of the Bay State street railway in said town.

A hearing was held upon this matter on July 13, 1917. Satisfactory arrangements having been made between the Bay State

Street Railway Company, the town of Dracut and the State Highway Commission, no further action appears to be necessary, and the petition is placed on file.

For the Commission,

ANDREW A. HIGHLANDS,

SEPTEMBER 4, 1917.

[P.¹S. C. 1794]

Secretary.

Petition of Selectmen of East Bridgewater and of Committee for town of Bridgewater relative to restoration of previous schedule of service on the Bay State street railway.

The Montello-Bridgewater route of the Bay State street railway, as it existed at the time when this petition was filed, extended from Spark street, Montello, in the northern part of Brockton, through the center of Brockton and then through East Bridgewater to Bridgewater. The length of the route was about 11.31 miles, divided as follows:—

	Miles.
Spark street to Brockton waiting room,	2.05
Brockton waiting room to East Bridgewater,	5.88
East Bridgewater to Bridgewater,	3.38
Total,	11.31

The Bay State company operates another line between Bridgewater and Brockton which is more direct, so that the route in question accommodates chiefly traffic between East Bridgewater and Brockton and between Bridgewater and East Bridgewater, rather than through traffic.

Prior to October 8, 1916, the regular service on the Montello-Bridgewater route was half-hourly throughout the day and evening. Since that date, on weekdays, from Monday to Friday, inclusive, 11 midday and evening trips have terminated at East Bridgewater center, so that there is only hourly service between that point and Bridgewater during so-called normal hours. No change was made in the service between Brockton and East Bridgewater, nor any change in the rush hour morning and evening service on any part of the route nor in the service between East Bridgewater and Bridgewater on Saturdays and Sundays after 11 A.M.

The petitioners now ask that the former service between East Bridgewater and Bridgewater be restored. The case is similar

to the cases involving reductions of service on the Bay State railway which were decided by the Commission on March 1, 1917, and the general discussion in that decision is applicable. Travel on the route is fairly uniform throughout the year and operating expenses are barely earned. Receipts per car mile in the past three fiscal years were as follows: —

	Receipts (Cents).
1914,	21.81
1915,	20.50
1916,	20.91

Traffic in the zone between East Bridgewater and Bridgewater is especially light. The evidence submitted by the company has been supplemented by observations independently made, since the hearings were closed, by the Inspection Department of the Commission. After a careful consideration of these observations and of the records of the company, the Commission is satisfied that the service during the hours in which it has been reduced is sufficient to accommodate the traffic without overcrowding the cars and without causing passengers to stand, except on unusual occasions. While some inconvenience has been caused by the reduction, under all the circumstances, and in view of the financial difficulties now facing the company, the Commission does not feel justified in requiring the former service to be restored.

As stated, however, in the similar cases recently decided, "communities in which the service is thus reduced have a reasonable right to expect that they will receive some compensation in the form of improved service, — that, for example, the cars will be kept clean and in good repair, that they will be operated with reasonable conformity to schedule, and that overcrowding in rush hours will be reduced to a minimum." The evidence at the hearing indicated that service on this route has been inferior. Equipment and track have been in poor condition and operation has been very irregular. Much of the delay in rush hours, it appears, has been due to traffic congestion in Brockton. Since the hearing, the route has been changed, so that trips terminate at the waiting room in the center of Brockton, instead of continuing through the city to Montello. This change should tend to make delays less frequent. A further change has been made so that cars which on two trips during the day formerly laid over twenty minutes in East Bridgewater before returning to Brockton, now utilize this time by continuing on to Elmwood, about halfway between East Bridgewater and Bridgewater, before turning back. These changes are improvements and others

may prove to be desirable. The Inspection Department has been directed to keep the route under special observation and to inform the Commission if it appears at any time that the company is not doing all that it can reasonably be expected to do, with the funds at its command, to maintain proper facilities.

For the reasons above stated, it is

Ordered, That the petitions be dismissed.

By the Commission,

ANDREW A. HIGHLANDS,

APRIL 10, 1917. [P. S. C. 1615]

Secretary.

Petition of the Selectmen of Hingham relative to the discontinuance of service on the Bay State street railway between Hingham and Crow Point.

Crow Point, in the town of Hingham, is located on a branch of the Bay State street railway which leaves the main line between Quincy and Hingham square and is about a mile in length. It was formerly a summer amusement resort under the name of Downers Landing, and the branch of the railway was built to take people to and from this resort. Several years ago the amusement features were given up, so that Crow Point is now almost wholly a summer residential colony and furnishes substantially all the patronage of the line. In addition to the service formerly furnished by the Bay State street railway, the Nantasket Steamboat Company operates a line of boats during the summer season between Boston and Nantasket Beach, which formerly made frequent stops at this point. The steamboat service, however, has now been reduced to one stop in the morning and one at night. The Bay State street railway reduced its service, during the past four years, to four trips weekdays and from two to five trips Sundays, and has now discontinued its service altogether, declaring at the hearing its intention to abandon its location and to take up its track.

The receipts for the last four years on this branch have been as follows:—

[illegible]

The following table gives the number of days the cars were operated on this line, the total receipts for each year, and the average receipts per day: —

YEAR.	Days operated.	Receipts per Year.	Average Receipts per Day.
1913,	119	\$587 06	\$4 93
1914,	124	566 01	4 56
1915,	141	614 55	4 36
1916,	136	585 16	4 30
Average,	130	\$588 00	\$4 54

The officials of the company estimate that it would require, to put the branch into condition for safe operation, an expenditure of about \$1,115. On the basis of the above table and estimate, it would take substantially all the gross receipts from the operation of the line for the next two years to put the road in condition to operate.

The suggestion was made that only one morning and one evening trip be operated. As under the conditions of the agreement which the company has with its men it is necessary to pay them for six hours time at least, the company would not receive enough return on the basis of operating these last four years to pay the platform expense of operating these trips. Mr. Goff, vice president of the company, at the hearing testified as follows (see Rec., p. 17): —

I ran out some computations on the basis of the investment as shown by Mr. Fuestel, which showed \$21,551 on his apportionment investment there for that route. And that makes such allowance on the Crow Point line as ought to be apportioned from the main line, which gives that investment. If you allow 6 per cent on that, and 4 per cent for depreciation, as has been suggested, and take the 1916 cost of operation even, it cost us something like 24 cents for every passenger we carried there last year.

While it is not to be expected that every line on the system shall be a paying line, the operating expenses, maintenance and fixed charges on this line are so greatly in excess of the gross receipts, that the Commission does not feel warranted, especially in view of the present financial condition of the company and

the immediate outlay which would be necessary for the reconstruction of the line, in ordering a restoration of this service.

It is therefore

Ordered, That the petition be dismissed.

For the Commission,

ALLAN BROOKS,

AUGUST 16, 1917. [P. S. C. 1800]

Assistant Secretary.

Petition of the Bay State Street Railway Company for approval of change in summer schedule of service on its Ipswich-Ipswich Junction route.

This petition involves a curtailment in the schedule of service heretofore given during the summer months on the Ipswich-Ipswich Junction route of the Bay State street railway, by which an hourly service, effective July 1, 1917, with additional trips on Saturday afternoon and half-hourly service during the greater part of Sunday, would be substituted for the previous half-hourly summer service.

The route in question is 4.9 miles in length and is a part of the through line operated between Ipswich Junction and Newburyport. No other part of the line has a more frequent service than once an hour during the summer season.

The company maintains that the contemplated reduction in service is justified by the small amount of revenue received from the limited traffic carried over this route. No evidence to the contrary was presented by the town of Ipswich, which through its town counsel opposed the granting of the petition mainly on the ground that the original grant of location in Ipswich provided that the street railway company should give the same service in that town that it maintains in the cities of Gloucester and Beverly. The attitude of the Commission upon this question is fully stated in a report dated March 1, 1917, on various petitions presented to it respecting the adequacy of service over this and certain other lines of the company. In that report it was held that the restrictions embodied in the original location in both the towns of Ipswich and Rowley were "covered by the principle laid down in the so-called Arlington case (*Board of Survey of Arlington v. Bay State Street Railway Company*, 224 Mass. 463), and that the Commission has authority, under the

provisions of the Public Service Commission Act of 1913 (St. 1913, c. 784) to make such rules or regulations or other orders with respect to service as are just and reasonable notwithstanding any restrictions which may be contained in these grants."

From an examination of the evidence in this case the Commission is of the opinion that a reasonable summer service will be established over the route under consideration by the operation of the schedule proposed by the company. If the reduced service, however, upon actual trial requires modification in the public interest, the Commission, as stated in the report above referred to, "will feel free to reconsider its present finding without prejudice and to make such further orders as the situation may seem to demand."

Some question arose at the hearing with respect to the need of displaying suitable signs on such cars on the Gloucester and Beverly lines as connect with cars for Ipswich at Ipswich Junction, in case the proposed change in service became effective, and the company has indicated its willingness to provide such signs.

It is therefore

Ordered, That the approval of the Commission be hereby given to the proposed change in summer service on the Ipswich-Ipswich Junction route of the Bay State Street Railway Company as shown in the schedule on file with and annexed to the petition.

Attest: ANDREW A. HIGHLANDS,

JUNE 29, 1917. [P. S. C. 1607]

Secretary.

Petition of the Mayor of the City of Melrose relative to service on the Bay State street railway at Melrose Highlands in that city.

The so-called Woburn-Malden route of the Bay State Street Railway Company extends from Woburn Center through Stoneham and Melrose Highlands to Franklin square in Melrose and thence through Melrose Center to Malden square, the total distance being 9.11 miles. Franklin square is an important junction point, cars operating from that point north through Wakefield and Reading to Lowell and Lawrence, east to Saugus and Lynn, south through Malden and Everett to the Sullivan square terminal of the Boston Elevated system and to Chelsea, and west to Stoneham and Woburn.

Prior to October 27, 1916, there was half-hourly service over the

entire length of the Woburn-Malden route in both directions during the morning rush period, hourly service during the remainder of the morning and the early afternoon and half-hourly service again in the late afternoon and evening. Besides this through service, a shuttle car was operated between Stoneham square and Franklin square every half hour, so that there was 15-minute service between these points in the morning rush period, three cars an hour for the remainder of the morning and early afternoon, and then 15-minute service again during the late afternoon and evening. On October 27, 1916, service on the route was reduced. No change was made during the two-hour rush period in the morning and the four-hour rush period in the evening, nor was any change made on Saturdays and Sundays, except a slight change in the service on Sunday morning. During normal hours, however, through operation to Malden square was discontinued, the cars from Woburn were turned back at Franklin square and the service between Franklin square and Stoneham was reduced. The net result of the change is that there are now, during the period of reduced service, but two cars an hour between these points, instead of three or four an hour as formerly, according to the time of day. Service between Woburn and Franklin square remains unchanged, but through service from Woburn to Malden is entirely discontinued except at the rush periods.

The petitioner in this case, the mayor of the city of Melrose, protests against this change of service and wishes the former service restored. He also complains of the poor connections which are made at Franklin square between cars operating on the various routes which terminate or pass through that point, and of the lack of proper facilities for convenient transfer, of the failure of cars to maintain their scheduled running time and of generally poor service within the city limits.

The change in service on this Woburn-Malden route was made by the company, according to the evidence introduced, for purposes of economy and because the traffic does not justify a more frequent service. Undoubtedly it is a line of light traffic, the receipts per car mile averaging but 21.8 cents for the period from April 16, 1916, to January 27, 1917, or hardly more than enough to pay the expense of operation, aside from fixed charges or profit. It is also true that the traffic records submitted by the company and the observations of our own Inspection Department furnish no basis for a belief that the change has resulted or is likely to

result in the overcrowding of cars beyond their seating capacity, except on unusual occasions.

The most important ground for complaint, as it developed at the hearing, seemed to be the lack, under the present arrangement, of through cars to and from the center of Melrose between the hours of 9 A.M. and 4 P.M., so that residents of the city living west of Franklin square in Melrose Highlands are obliged to change cars at Franklin square and suffer delay and inconvenience in traveling a comparatively short distance within the city limits. The delay is especially vexatious in returning from the Center to the Highlands. In the opinion of the Commission this complaint is justified. It seems, also, that conditions can, in this respect, be materially improved without undue burden upon the company. The distance between Woburn and Franklin square is long enough so that by a slight reduction in running time and without any increase in the number of cars operated, a car on a trip from Woburn can proceed past Franklin square as far as the City Hall in Melrose and return from that point instead of from the square. This would give the people of the west side hourly or half-hourly service to and from the center of the shopping district of Melrose during the period of normal traffic, in addition to the through service which they already have during the so-called rush hours, leaving them as well off in this respect as they were before the reduction in service was made. The matter has been taken up with the company and as it is willing and ready to make this readjustment at once, no formal order has been deemed necessary, but notice has been given that the Commission wishes the change to be made.

If this is done it should, in the judgment of the Commission, meet the reasonable needs of the situation. At all events, no further action is desirable until sufficient opportunity has been afforded to observe the effect of this change. The traffic on the route is not enough to justify a more frequent service during normal hours, and the readjustment proposed should go far to correct the conditions of which the petitioner complains, at the junction point at Franklin square by lessening the number of transfers which are made at that point.

It should be said, however, that the evidence in the case went very far to prove that, aside from any question of frequency of cars or facility of transfer, service in this district has been poor and rather shiftlessly maintained. There is clearly room for improvement, even with present equipment. In this connection,

remarks of the Commission in a recent case of similar nature have application: —

The Commission is also of the opinion that the communities in which the service is thus reduced have a reasonable right to expect that they will receive some compensation in the form of improved service, — that, for example, the cars will be kept clean and in good repair, that they will be operated with reasonable conformity to schedule, and that overcrowding in rush hours will be reduced to a minimum. . . . The Inspection Department has been directed to keep the lines upon which service has been or is to be reduced under special observation and to inform the Commission if it appears at any time that the company is not doing all that it can reasonably be expected to do, with the funds at its command, to maintain proper facilities.

Similar directions have been given to the Inspection Department in this instance.

By the Commission,

ANDREW A. HIGHLANDS,

MARCH 16, 1917. [P. S. C. 1641]

Secretary.

Petition of Thomas J. Kenney (on behalf of the Canton Street Associates of Randolph) relative to the restoration of stopping post on the Bay State street railway at the corner of North Main and Canton streets, in the town of Randolph.

A public hearing on the above petition was given on January 19, 1917. It appears that the Bay State Street Railway Company, in endeavoring to improve the service on the line operated between Campello car-house, Brockton and Mattapan, Boston, discontinued a number of stopping places, including the one at the corner of North Main and Canton streets, which the petitioners wish restored.

The situation in Randolph at this point is as follows: North Main street in that part of Randolph called West Corners, and through which the Campello-Mattapan line operates, is intersected by Oak street from the east, and Chestnut and Canton streets from the west, the two streets first named being opposite each other and the last being 160 feet north therefrom. There is a passing siding in North Main street at the intersection of Chestnut and Oak streets where all cars are now required to stop, and it would seem, from an examination of the plan sub-

mitted by the company, showing the location of the streets and buildings in this section, that this is the logical place for a locality stop. Moreover, there is a store at this point which is used more or less as a waiting room by patrons of the line.

It seems to the Commission that the slight inconvenience caused to some of the patrons of this line, by reason of the discontinuance of the Canton street stop, as well as other stops, should be more than compensated for by the better service the company is enabled thereby to render, and, inasmuch as the distance between the discontinued stop at Canton street and the present stop near Chestnut street is so short (namely, 225 feet), the Commission is not disposed to order the restoration of the former stop. The petition is therefore dismissed.

By the Commission,

ANDREW A. HIGHLANDS,

MARCH 16, 1917.

[P. S. C. 1628]

Secretary.

Petition of Mayor of the City of Woburn relative to the double-tracking of the Bay State street railway in Main street in Woburn.

Memorandum.

Upon this petition a public hearing was held and the matter was further considered in conference with representatives of the company and of the city. As an adjustment satisfactory to both parties was reached, the petition is placed on file.

For the Commission,

ANDREW A. HIGHLANDS,

OCTOBER 4, 1917. [P. S. C. 1669]

Secretary.

Complaint of Robert B. Martin and others concerning change of crews of the Boston Elevated Railway Company and the Bay State Street Railway Company at the Hyde Park-Boston line.

Memorandum.

On October 11, 1916, the Commission held a conference at this office with the complainant and other residents of that part of Boston which was formerly Hyde Park and with representatives of the Boston Elevated Railway Company and the Bay

State Street Railway Company. It appears that cars of the latter company are operated from Readville and Dedham to Forest Hills, where passengers may transfer to and from the elevated rapid transit lines. Between Forest Hills and the old Hyde Park-Boston line, a distance of a little less than 2 miles, the cars are operated by the Boston Elevated Railway Company over its own tracks and with its own crews. Between the Hyde Park-Boston line and Readville, a distance of 3.07 miles, and between this line and Dedham, a distance of 4.6 miles, they are operated by the Bay State Street Railway Company over its own tracks and with its own crews. Crews are exchanged at the line, where the tracks of the two companies connect. Outgoing and incoming cars meet at this point and the crews step from one car to another.

The inevitable consequence of this arrangement is that a delay results at the point where the exchange takes place, unless both cars are operated on time, and it is of these delays that the residents of Hyde Park complain. The distance which many of them ride in coming to and from Forest Hills is comparatively short and they feel that it is an unreasonable hardship that they should be obliged, in making such a journey, to suffer the inconvenience caused by the change of crews midway, — a feeling which is aggravated by the fact that they are compelled to pay two fares in going to and from the center of Boston. They therefore desire the Commission to require the companies to make some arrangement whereby the exchange may be avoided and every car may be operated the entire distance by one set of men.

Under chapter 487 of the Acts of 1911, and also under section 25 of the Public Service Act (St. 1913, c. 784), the Commission is authorized to order connecting street railway companies to establish through routes and to require one company to receive and convey over its tracks the cars of the other company; but this authority is limited in each case by the proviso that "a railroad or railway company shall have control of and responsibility for the management and operation of all trains or cars while they are upon its railroad or railway as fully as if it owned them." In view of this proviso, it is clear that the Commission has no power under existing statutes to compel a company to allow foreign cars to be operated over its tracks by crews whom it did not select and who are not in its employ. Still less has the Commission power, under existing law, to compel a company to make such crews its own employees to the extent necessary for the purposes of the through service, or to compel the com-

pany by whom they were originally employed to consent to such an arrangement. It is, indeed, very doubtful whether such power could be conferred by the legislature.

It follows that the Commission is without jurisdiction over the complaint which has been made. At the conference, however, any question of jurisdiction was waived by the companies' representatives. Counsel for the Bay State Street Railway Company made the following definite statement, to which counsel for the Boston Elevated Railway Company, who was present, in no way demurred (Record, p. 14): —

So far as this statute is concerned, of course the fact that the Board has not taken any authority is not going to disturb any of us in this conference. The service at this point — if it is not adequate, and if these companies, either of them, are at fault — is going to be corrected; and if this Board says we shall do something that we are not doing, we are not going to search the statutes or the authorities to see if the Board has technical authority to make that statement. So I do not think we need to be troubled on that question.

In effect, therefore, the Commission has been made a board of arbitration by common consent of all interested parties and it has felt in duty bound to consider the complaint upon its merits and express an opinion thereon for whatever that opinion may be worth. The question raised is of more than local interest, as the case in point is typical of a large number of similar cases which exist all over the commonwealth at connecting points between the lines of two street railway companies.

So far as the convenience of the traveling public is concerned, we think that the complaint in the present instance is justified. Evidence submitted by the Bay State company itself indicates that, while, as a rule, the connection is made promptly, delays at the junction point are not infrequent and that these delays are at times as long as five minutes or more. In a run so comparatively short such delays without doubt cause no little inconvenience, which would be avoided if no change of crews were necessary.

On the other hand, the companies offer serious objections to any arrangement other than that which exists at the present time. They lay especial stress on the difficulty of fixing liability for accidents and of enforcing proper rules of discipline, and claim that they cannot voluntarily assume the responsibility of allowing men over whose conduct they do not have sole and undivided control to operate cars over their tracks. They direct

attention also to the facts that the wage scales of the companies are different, that the operating rules are not the same and that each company has an agreement with its organized employees governing assignment of runs and working conditions in general, so that complications would arise if men in any division were deprived of work by the admission of crews from foreign territory. They raise the further objection that the employees of one company would be placed in the position of collecting fares for which they would be obliged to account, in part, to the other company.

These objections, the Commission realizes, have much force. The devising of a plan which would effectively protect the interests of both companies, and which would make it possible to operate cars in a situation like the one in question without a change of crews, is not at all the simple matter which it might, at first thought, appear to be to patrons who are inconvenienced by delays. At the same time, after such investigation as it has been able to make, the Commission is not convinced that such a plan is impracticable, a conclusion to which it has been led by the following considerations:—

(1) Cars of the Bay State company are now operated into Scollay square by its own crews over the tracks of the Boston Elevated company, under trackage rights acquired many years ago. When the Bay State crews are on these tracks fares are still collected for the benefit of the Bay State company, but the crews are subject in other respects to Boston Elevated rules and there seems no reason to believe that the arrangement has been detrimental to public safety.

(2) While the instances are rare, there are cases in this commonwealth where, without the granting of trackage rights, arrangements have been made such as the complainant desires for the operation of cars over jointly owned routes by the crews of one company. In such cases liability in the case of accidents is provided for by carefully drawn contractual provisions, and each company is given full control of the crews so long as they are on its tracks.

(3) In other parts of the country it appears that such arrangements are comparatively frequent, especially where interurban roads connect with city lines. In these cases the foreign cars are allowed to run into the city over the city company's tracks in charge of the foreign company's crews, but are usually prohibited from doing any local business during the journey.

(4) The difficulties incident to existing agreements with organized employees might be met by providing that certain of the through runs should be made by Bay State crews and certain others by Boston Elevated crews. There would seem to be no good reason why all work should be given over to the Bay State men.

(5) The difficulties incident to the collection of fares might be met by the installation of additional fare registers or by the use, during a part of the journey, of approved fare-collecting and registering devices.

(6) It would also seem quite possible to devise a plan whereby only such crews would be used in the joint service as would meet the approval of both companies, after the usual preliminary period of instruction.

The particular case under consideration differs from many of the other similar cases in Boston and vicinity in the fact that the distance from the point where the crews are changed to the end of the route at Forest Hills is so short. Because of this fact the delays incident to the exchange are worthy of more serious consideration than might be the case if the distance were longer. Under the circumstances it seems desirable that the exchange should be avoided, and the Commission is of the opinion that it ought to be possible for the companies to agree upon a practical plan which will lead to this result. In saying this, however, the Commission must be understood as referring solely to the particular situation under discussion. It is unnecessary to go further than this at the present time, and other similar cases must be left for consideration in the light of their respective merits and of the further experience which may be gained in the future in the treatment of the one now in question.

While this is the judgment of the Commission, upon the evidence now before it, it is an opinion which, owing to the complexities involved, must be regarded as tentative rather than final, and as subject to possible modifications upon the presentation of further evidence. Nor does the Commission feel that it is called upon to draft a definite plan for the companies to adopt. This is a matter requiring much time and thought, which ought to be expended in the first instance by the legal and operating departments of the two companies rather than by the Commission. For this reason, it has seemed sufficient for present purposes to state that a situation exists which is unsatisfactory, that it is the present opinion of the Commission that relief can be given, and that the two companies ought to be prepared to submit, before the expiration of three months from the date of this memorandum, a plan for the through service desired or else to bring to the attention of the Commission at once a more convincing statement than has yet been presented of the reasons why such a plan is impracticable.

Attest: ANDREW A. HIGHLANDS,
APRIL 23, 1917. [P. S. C. Com. 851]

Secretary.

*Petition of citizens of Lexington concerning street railway service
between Lexington and Boston.*

The service complained of by the petitioners between Lexington and Boston is furnished by two separate street railway companies, the Middlesex and Boston Street Railway Company operating between Lexington and Arlington Heights, and the Boston Elevated Railway Company operating between the latter place and Boston. Formerly the cars of the Middlesex and Boston were operated over the tracks of the Boston Elevated through to Sullivan square, on a 30-minute headway. Later, the terminus of this through car operation was changed from Sullivan square to Harvard square, and in June, 1916, through service was discontinued altogether. The Middlesex and Boston cars are now operated to Arlington Heights only, so that Lexington passengers going to or from Boston are compelled to change cars at that point. The Boston Elevated operates on a 6-minute headway between Arlington Heights and Harvard square, and the Middlesex and Boston on a 30-minute headway during normal hours, with extras every 15 minutes during the morning and evening rush hours. The petitioners complain that the transfer at Arlington Heights occasioned by the discontinuance of this through service causes them much inconvenience and delay, especially in going from Boston to Lexington. This is occasioned by reason of the longer interval in the running time between cars of the Middlesex and Boston. They now ask to have the through service which they formerly enjoyed between Lexington and Harvard square restored.

The Boston Elevated company presented evidence showing that its line from Arlington Heights to Harvard square, especially between the latter point and Arlington Center, has a very heavy traffic and contended that, under the old arrangement, the lack of carrying capacity and the smaller entrances and exits of the Middlesex and Boston cars caused delays in loading and unloading which retarded traffic generally on the line. It further contended that the present facilities for handling surface car traffic at Harvard square are inadequate and that, in order to utilize present tracks and facilities most efficiently, large car and trailer operation is necessary. The objections so set forth seem to the Commission well founded. If either the Middlesex and Boston or the Boston Elevated had sufficient or suitable cars to operate through on the joint route, these objections would be less weighty, but as neither company has such cars that it can divert

to this use, it follows that the part of the complaint relating to through service must be dismissed.

Incidental to the discussion of the through service there was much complaint regarding the inconvenience of transfer facilities at Arlington Heights, and it would seem desirable to the Commission that these facilities should be improved. This could be done by extending the tracks of the Middlesex and Boston upon land of the Boston Elevated west of the loading platform, and by erecting a suitable waiting station between the tracks of both companies. The greater part of the expense involved in this suggested change would have to be borne by the Boston Elevated railway and would be an expenditure properly chargeable to capital. In view of the present financial condition of the Boston Elevated Railway Company and having in mind the other necessary expenditures of the Company, the Commission believes that it would not be warranted in issuing an order to require these improvements at this time. The company, should, however, be prepared to undertake the work as soon as conditions warrant.

By the Commission,

ANDREW A. HIGHLANDS,

DECEMBER 31, 1917.

[P. S. C. 1710]

Secretary.

Petition of the town of Winchester relative to the granting of certain locations to the West End Street Railway Company (Boston Elevated Railway Company, lessee), and the Bay State Street Railway Company in Massachusetts avenue and Mystic street in the town of Arlington, necessary to the establishment of a through route from Winchester to Harvard square, Cambridge.

This is a petition of the town of Winchester requesting the Commission to grant locations for the construction in the town of Arlington of a connecting track between the line of the West End Street Railway Company, Boston Elevated Railway Company, lessee, on Massachusetts avenue and the line of the Bay State Street Railway Company on Mystic street, in order to make possible the operation of a through service from Winchester to the Harvard station of the Cambridge subway.

For a proper understanding of the pending petition it may be desirable to review briefly the steps which have already been taken, with a view to the establishment of a through route for

street railway transportation from Winchester by way of Arlington Centre to Harvard square, Cambridge. A petition for the establishment of through street railway service over this route was filed with the Board of Railroad Commissioners by residents of Winchester in February, 1913. After a public hearing by the Board, and prior to any finding thereon, the subject matter of that petition, at the request of the board of selectmen of Winchester, was referred for hearing and consideration to the Joint Commission created by chapter 108 of the Resolves of 1913, for the purpose of investigating street railway service in the metropolitan district. The Joint Commission made no finding on this matter, but suggested that "as this case involves no fare readjustments it may well be left with the Public Service Commission for final disposition" [2d P. S. C. Rep., p. 403, at p. 430].

In accordance with that suggestion the case was reheard by the Public Service Commission, and on July 22, 1914, the Commission issued an order recommending that the Boston Elevated and Bay State companies co-operate in bringing about the rearrangement of service requested by the petitioners (2d P. S. C. Rep., p. 234). The companies, after negotiation, finally reached an agreement for the joint operation of this through service in compliance with the recommendation of the Commission. For the establishment of this service it was necessary, however, that a short section of track should be constructed in Arlington to connect the Bay State tracks on Mystic street with the Boston Elevated tracks on Massachusetts avenue. The companies accordingly applied to the joint board of selectmen and public works of Arlington for the necessary locations, but the board declined to grant the locations for which the companies petitioned.

The Commission thereupon held a conference with representatives of the two companies, the selectmen of Arlington and Winchester and other interested parties, "for the purpose of determining whether the selectmen of Arlington are disposed to approve of *any* locality for a connecting track between the line of the Bay State Street Railway Company and the line of the Boston Elevated Railway Company, or whether any other action may be taken to make effective the recommendation of the Commission." Following this conference the engineer of the Commission and its inspector of street railways in this district, after consultation with the board of selectmen and other officials of the town of Arlington, and an investigation of local transporta-

tion conditions, prepared plans for three alternative locations for the necessary track connection, namely, by way of Mystic street, by way of Chestnut street and by way of Medford street. These plans were presented and discussed with the joint board of selectmen and public works of Arlington, but none of the plans suggested proved satisfactory to the town. The engineer and inspector of the Commission thereupon filed a report stating that in their opinion the town authorities would "grant no location for a connection in existing streets, but would favor a connection in a street which is proposed between Massachusetts avenue, near the town hall, and Mystic street. The construction of this new street may be undertaken within a few years, but as it is involved with a grade crossing elimination project, it is not to be considered as very imminent. It is fair to say that such a connection would be more desirable and feasible than one in existing ways, and would better serve local traffic." The refusal of the town authorities to approve of any location on existing streets for the necessary track connection practically nullified the Commission's recommendation for the establishment of the through service, as under the existing law no appeal lay from the adverse decision of the board of selectmen of Arlington.

In 1916 the jurisdiction of the Commission in cases of this character was enlarged by the enactment of chapter 137 of the General Acts of that year. By the terms of that act, if the Commission orders the establishment of a through service by two or more street railway companies and if a city or town fails to grant the locations in such city or town which are necessary for the establishment of such through service, the Commission, upon petition, may grant such locations if in its opinion public convenience and necessity require. It is to be observed that before the Commission can grant such locations it must first have issued a formal order for the establishment of the proposed through route for the transportation of passengers between the points designated, and application for the necessary locations must first be made to the local authorities. As the action taken by the Commission in 1914 was in the form of a recommendation rather than an order, it became necessary, for the exercise of the authority granted by the act of 1916, that proceedings should be started again from the beginning.

A new petition for the establishment of the proposed through service was accordingly filed in due course by citizens of Win-

chester, and the Commission, on October 14, 1916, issued an order requiring "the establishment by the Bay State Street Railway Company and the Boston Elevated Railway Company of a through route for the transportation of passengers between Winchester and the Harvard station of the Cambridge subway." In November, 1916, the West End Street Railway Company (by the Boston Elevated Railway Company, its attorney) and Bay State company petitioned the joint board of selectmen and public works of Arlington for locations to connect the tracks of the Boston Elevated company in Massachusetts avenue with those of the Bay State company in Mystic street. The joint board, after a hearing, acted adversely upon both petitions by denying the same on or about January 16, 1917. Thereafter the town of Winchester in accordance with section 25, chapter 784 of the Acts of 1913, as amended by chapter 137 of the General Acts of 1916, filed the pending petition, requesting the Commission to grant to said companies suitable locations for the establishment and operation of through car service from Winchester to Harvard square. Upon this petition a public hearing, duly notified, was held on March 15, 1917.

At the hearing objection was raised by the Boston Elevated company to the grant of any location for the establishment of the proposed through service on the ground that such service could not, from the standpoint of efficient operation, be made to co-ordinate properly with the rest of the service furnished by the company over Massachusetts avenue between Arlington Centre and Harvard square, that it would tend to divert from other rapid transit lines to the Cambridge subway a large amount of travel originating in Winchester and points beyond, and would thus add to the existing congestion in the subway station at Harvard square. The town of Arlington also objected to the locations which had been requested by the companies, on the ground that they would create conditions of grave danger and inconvenience to pedestrians and vehicular traffic at and near the corner of Mystic street and Massachusetts avenue. The Town, however, declined to suggest any other method of connecting the tracks of the two companies on existing ways that would meet with their approval.

Objections similar to those offered by the Boston Elevated company were presented by that company when the establishment of this through service was being considered by the Joint Commission (see 2d P. S. C. Rep., p. 430). These objections

were again offered by the company at the subsequent hearing before the Public Service Commission in 1914, but the Commission, after investigation and consideration, was of the opinion that public convenience and necessity required the establishment of the proposed through service, and made its recommendation accordingly. A similar finding was made by the Commission in its order of October 14, 1916. While the Commission is of the opinion that the growth of street railway traffic between Arlington Centre and Harvard square and the increased congestion in the subway station at that point give greater force to the objections raised by the Boston Elevated company than did the conditions which existed three years ago, when the Commission first made a finding on this matter, and while the through operation to the Cambridge subway at Harvard square of other lines in addition to the one now under consideration might not prove desirable, the Commission is also of the opinion that there has been no such change of conditions as would justify it in reversing the findings already made in this case.

It remains for the Commission to consider whether the physical conditions at the proposed point of connection are such as to make it feasible to grant locations for the proposed through service. Mystic street is a main thoroughfare between Arlington and Winchester, joining Massachusetts Avenue at Arlington Centre, at the point where the avenue is crossed at grade by the two tracks of the Lexington branch of the Boston and Maine railroad. The large amount of street traffic, the railroad tracks and the crossing gates, and the view limited by the buildings in the easterly corner of the intersection of the two streets, combine to make the place one to which no further traffic complications should be added unless required by public convenience and necessity. The locations which the companies sought to obtain from the Town of Arlington consisted of double curved tracks connecting with the Boston Elevated tracks in Massachusetts avenue and extending over Mystic street to a point near Winslow street, and a location and relocation of the existing track of the Bay State company and location for a second track constituting a turnout on Mystic street at Kimball road.

After a view, the Commission is of the opinion that the town of Arlington was fully justified, by reason of the narrow width of Mystic street and the congestion of vehicular traffic, in its refusal to permit the companies to construct a double track location at the corner of Mystic street and Massachusetts avenue. The construction of the proposed turnout, about 400 feet in

length, on Mystic street, extending across its intersection with two other streets, Kimball road and Davis avenue, would also constitute a serious obstacle to vehicular traffic at that point, and the Commission is unable to find that public convenience and necessity require its establishment.

After careful investigation by its engineering department, the Commission favors a location for a connection with the tracks of the Boston Elevated railway in Massachusetts avenue by means of double curved tracks extending to a point southeasterly of Mystic street produced, and thence by switches and a curved single track to a point of connection with the present terminus of the single track line of the Bay State company in Mystic street, and also a location for a turnout or passing siding about 155 feet in length, in Mystic street, opposite Chestnut street, all as shown in red in a plan entitled "Arlington Mass. Proposed Connection between the Bay State St. Ry. and the Boston Elev. Ry. Scale 1 in. = 40 ft. Mass. Public Service Commission, May 1917," which is on file with the records of this case.

It is believed that the through service over the connecting track described above will not materially add to the existing congestion, but will relieve that portion which is due to the transfer of passengers at this point between the cars of the street railway companies. The connecting track as shown will tend to separate the traffic north bound in Massachusetts avenue, which turns into Mystic street, from that in Mystic street going toward and turning to the left in Massachusetts avenue. The clear space between the rail of the new track and the curve on the easterly corner will be 15 feet and between a car and the curb at the same place a minimum of about 12 feet, which clearances correspond practically with those existing on Mystic street. The clearance on the westerly side of the proposed track is restricted by the gate box, with the protecting curbing of the crossing gates of the Boston and Maine railroad. This clearance would be increased and the street conditions improved if this curb-protected area were decreased in size and the gate box and electric light pole moved about 13 feet northerly, as shown in red upon the said plan. The only new pole required by the new track locations is one in this curved space, which may also be utilized to carry the electric street light now there. A change in connection with these crossing gates appears to be under the jurisdiction of the selectmen. The estimated cost would be about \$150.00, and if the selectmen grant the necessary authority for such relocation, the Commission recommends that the expense

thereof be borne by the Boston Elevated Railway Company. If this gate box is moved, as indicated above, the sidewalk curb on the northerly side of Mystic street for a length of about 20 feet immediately adjacent to the Boston and Maine railroad crossing in Massachusetts avenue should be relocated in a curved line, as shown in red on the said plan.

The principal obstruction to traffic caused by the operation of the through cars over the connecting track will be when a car from Harvard square is turning from Massachusetts avenue into Mystic street, thus preventing the passage of a vehicle turning from Mystic street to the left into Massachusetts avenue through the space immediately east of the gate box above mentioned. The minimum length of view the driver of the vehicle would have of such a car would be about 130 feet. He would also have an alternative route, assuming that the crossing gates were not lowered, by passing to the right of the gate box and across the tracks of the Boston and Maine railroad.

In connection with the operation of through service, it is necessary also to provide for a turnout as near the junction of the two railways as is practicable, in order to enable cars to stand and pass each other while changing crews. On account of the narrowness of Mystic street and driveways which might be blocked by the standing cars, the nearest available place is at the junction of Chestnut and Mystic streets, a distance of about 500 feet from the present terminus of the Bay State line. The space here allows of a length of turnout sufficient for only one car. The location of this turnout is, from an operating standpoint, somewhat inconvenient, as it will necessitate the movement of the through cars between Massachusetts avenue and the turnout by crews of the Boston Elevated company over track owned by the Bay State Street Railway Company. An agreement between the two companies for the operation by the Boston Elevated Railway Company of cars over the tracks of the Bay State Street Railway Company, and the turnout mentioned, will be necessary. It is to be understood, also, that no fare shall be collected from passengers by the Boston Elevated company while a car is on the tracks of the Bay State company.

It is therefore

Ordered, That in accordance with the provisions of section 25 of chapter 784 of the Acts of 1913, as amended by chapter 137

of the General Acts of 1916, the West End Street Railway Company (Boston Elevated Railway Company, lessee) be hereby granted locations for its railway tracks in the town of Arlington to provide for the operation of through car service from Winchester to Harvard square in Cambridge: —

Beginning at a point in the present outward bound track of its railway in Massachusetts avenue in said town of Arlington distant southeasterly, measured in the center line of said track, about eighty-two (82) feet from the nearest rail of the tracks of the Boston and Maine railroad; thence by a switch and curve to the right about one hundred twelve (112) feet to northeasterly line of said Massachusetts avenue southeasterly of Mystic street produced.

Also, beginning at a point in the present inward bound track of said railway opposite the point of beginning of the first mentioned location; thence by a switch and curve to the right about sixty-seven (67) feet; thence by a straight line tangent to the last mentioned curve and by a switch about seventeen (17) feet to a point in the first mentioned location.

All to be substantially as shown in red on the plan herewith entitled "Arlington, Mass. Proposed Connection between the Bay State St. Ry. and the Boston Elev. Ry. Scale 1 in. = 40 ft. Mass. Public Service Commission May 1917."

The tracks in the above described locations to be constructed in accordance with the standards of the Boston Elevated Railway Company of nine-inch girder rail, with the space between the rails and eighteen inches outside thereof, paved with new granite blocks, laid on a concrete base and with the joints grouted with cement.

For supporting the span and trolley wires for the above tracks a location for an iron pole is hereby granted in the curb enclosed space in said avenue, situated between said track locations and the tracks of the Boston and Maine railroad.

It is

Further ordered, That in accordance with the provisions of section 25 of chapter 784 of the Acts of 1913, as amended by chapter 137 of the General Acts of 1916, the Bay State Street Railway Company be hereby granted locations for its railway tracks in the town of Arlington to provide for the operation of through car service from Winchester to Harvard square in Cambridge: —

Beginning at a point in the northeasterly line of Massachusetts avenue in said town of Arlington southeasterly of Mystic street produced, said point being also the northerly end of the first location of the track of the West End Street Railway Company hereinbefore described; thence

northeasterly by a curve to the right about fifty (50) feet to a point in the existing track of said Bay State Street Railway Company in Mystic street in said town of Arlington.

The track in the above described location to be continuous with the track constructed in the first location hereinbefore described for the tracks of the West End Street Railway Company and to be of nine-inch girder rail construction, with the space between the rails and eighteen inches outside thereof paved with new granite blocks, laid on a concrete base and with joints grouted with cement.

Also, the location of a turnout or passing siding in said Mystic street opposite Chestnut street, described as follows:— said turnout shall be located on the southeasterly side of the existing track of said Bay State Street Railway Company with the point of the southwesterly switch distant about four hundred eighty (480) feet northeasterly from the northeasterly side of Massachusetts avenue hereinbefore described; the length of said turnout between points of switches, measured on the center line of the existing track, shall be about one hundred fifty-five (155) feet and of sufficient clear length for one car to stand without interfering with the passing of cars on the existing track. The space between the rails and eighteen inches outside thereof and between said turnout and the existing track shall be paved with new granite block paving, laid on a concrete base with joints grouted with cement. Said turnout shall be constructed of nine-inch girder rail and in accordance with the standards of the Bay State Street Railway Company.

Said locations shall be substantially as shown in red on the plan entitled "Arlington, Mass. Proposed Connection between the Bay State St. Ry. and the Boston Elev. Ry. Scale 1 in. = 40 ft. Mass. Public Service Commission May 1917," which is filed with the records of this case.

By the Commission,

CHARLES E. MANN,

MAY 18, 1917. [P. S. C. 1692]

Executive Secretary.

*Petition of the Fellsway Home Improvement Association (Medford)
concerning service on the Boston Elevated railway from Sullivan square in Boston to Elm street in Medford.*

Memorandum.

The Boston Elevated Railway Company operates, on this Fellsway line, during rush hours, twenty cars an hour between

Sullivan square and Forest street, Medford, making a three-minute headway. Four of these cars are operated to Spot Pond about a mile beyond Forest street, making a fifteen-minute headway at Elm street, which is located between Forest street and Spot Pond.

The petitioners desire a ten-minute instead of a fifteen-minute headway, as at present, to Elm street. A hearing was held on this petition, September 27, 1916. Since the hearing several conferences have been held between representatives of the petitioners, the Boston Elevated Railway Company and the Commission, and arrangements have been made to extend the terminus of some of the cars now ending at Forest street to Elm street, which will give a seven and eight-minute headway between Elm street and Sullivan square. This arrangement appears to be satisfactory to the petitioners and the company has agreed to put the service into effect during rush hours on and after February 3, 1917, and during normal hours on and after March 3, 1917. The petition is, therefore, placed on file.

For the Commission,

ALLAN BROOKS,
Assistant Secretary.

FEBRUARY 1, 1917. [P. S. C. 1498]

Petition of Mary K. O'Sullivan, of West Medford, relative to the restoration of stopping post on the Bay State street railway on Winthrop street in Medford.

Memorandum.

Following the hearing upon this matter held February 20, 1917, the company agreed to restore the stopping post under consideration until further attempts are made to lessen the running time of cars. The petition is, therefore, placed on file.

Attest: ANDREW A. HIGHLANDS,
Secretary.

MARCH 26, 1917. [P. S. C. 1640]

Investigation by the Commission, under chapter 186 of the Special Acts of 1917, relative to the establishment of street railway service in Pleasant street in the city of Boston.

R. H. HOLT for Boston Elevated Railway Company.

JOSEPH P. LYONS for City of Boston.

F. J. W. FORD

JOHN J. ATTRIDGE

} for Boston City Council.

JOHN J. TOOMEY for South Boston Trade Association.

MICHAEL J. O'LEARY for South Boston Citizens' Association.

DANIEL W. CASEY

THOMAS J. KENNY

} for Residents of South Boston.

Chapter 186 of the Special Acts of 1917 reads as follows: —

SECTION 1. The public service commission is hereby directed to investigate forthwith, by a public hearing or hearings, the necessity and convenience to the general public of street railway service in Pleasant street in the city of Boston, the said street having been widened under the authority of chapter five hundred and ninety-one of the acts of the year nineteen hundred and eleven, and provision having been made for railway service therein by chapter one hundred and fifty-three of the Special Acts of the year nineteen hundred and sixteen.

SECTION 2. If the public service commission shall find that public necessity and convenience so require, the commission shall take such action as may be necessary promptly to establish street railway service in the said street.

A public hearing upon this matter was held on May 1, 1917.

Pleasant street is a thoroughfare in the city of Boston about 1,725 feet long, running from Washington street to Park square and crossing Shawmut avenue and Tremont street near the entrance to the Tremont Street subway. It forms a continuation of Broadway Extension, one of the important streets leading from South Boston. Under the provisions of chapter 591 of the Acts of 1911, Pleasant street was widened by the city to a width of 60 feet. It appears that one of the chief reasons for this improvement was to make possible better street railway transportation between South Boston and the city proper by the establishment of a new street railway route from Washington street to Park square, connecting with the route already existing on Broadway Extension and with the Tremont street subway at the southern portal. The act provided that a street railway location upon the widened street might be secured upon the

payment by the company of a proportionate part of the expense of reconstruction.

No application for such a location was made, either before or after the work was completed, and it was stated in behalf of the Boston Elevated Railway Company that it was very unlikely that application ever would be made under the terms of the act. Because of this situation, the following resolution was passed by the Boston City Council on February 7, 1916:—

Whereas, The City of Boston having widened Pleasant street, between Washington and Eliot streets, at an expense of about seven hundred thousand dollars; and

Whereas, One of the reasons for the widening of said Pleasant street was to provide better means of street railway service by connecting Dorchester and South Boston lines of transportation with the Tremont street subway; and

Whereas, By the terms of chapter 591 of the Acts of 1911 the street railway company operating in the city of Boston has declined to accept the terms of said chapter 591 of the Acts of 1911 and has not applied for a location in said Pleasant street; be it

Resolved, That the City Council of the City of Boston favors the passage of an act by the Legislature which will permit the granting of a railway location in said Pleasant street on such terms and conditions as street railway locations are granted in other public streets of the city, and that the Committee on Legislative Matters of said City Council be requested to appear before the legislative committee having the matter in charge and urge favorable consideration thereof.

As a result of this action, chapter 153 of the Special Acts of 1916 was passed, amending the existing law in accordance with the desires of the Council. Still no steps were taken by the railway company to secure a location upon the street, and for this reason the statute (above quoted), under which the present proceedings were instituted, was passed at the last session of the General Court.

At the hearing, the public advantage of tracks upon Pleasant street was strongly urged by representative organizations of the citizens of South Boston, by the assistant corporation counsel of the City of Boston and by a committee from the Boston City Council, appointed in accordance with the following resolution adopted April 30, 1917:—

Resolved, That the City Council of Boston hereby places itself on record as in favor of the Boston Elevated Railway Company laying tracks on Pleasant street, City of Boston.

Ordered, That a committee of two members of the City Council be appointed to appear before the Public Service Commission at 10.30 to-morrow (Tuesday) to favor the laying of said tracks.

At the present time cars run down Broadway in South Boston, over Broadway Extension, up Washington street, through Dover street, down Tremont street to the subway and thence to Charlestown. Ordinarily these cars do not pass over Broadway Extension but leave South Boston by way of Dover street. The present route is caused by the subway construction now going on in South Boston, but the normal route is but little less circuitous. By building a short stretch of track along Pleasant street from Washington street to the entrance of the subway, a distance of only 460 feet, these cars could reach the subway and the center of the city by a much more direct path. The saving in time, in comparison with the present route, would be about $5\frac{1}{2}$ minutes per trip, and, in comparison with the normal route, from 2 to 3 minutes. It is urged that the expense of this construction would be comparatively slight, that the outlay would be offset by a saving in operating expense, and that public convenience and necessity clearly demand that the citizens of South Boston be given this expedited service. It is also urged, although not so strongly, that the track should be continued the remainder of the distance along Pleasant street to Park square, in order that South Boston may have more direct connection with Cambridge and points in the Back Bay territory, and also in order that additional service may be given to the Park square district, which shows promise of rapid development for business and commercial purposes.

In answer to these claims, the company calls attention to the fact that the so-called Dorchester tunnel will be open for public use in the not remote future, and that elaborate provisions have been made for a transfer station between the tunnel and the surface lines at Broadway in South Boston. By following this tunnel route, it will be possible to go from the foot of Broadway to Park street in 5 minutes, whereas the scheduled running time between the same points over the proposed route via Pleasant street would be $9\frac{1}{2}$ minutes. The company urges that the cost of the tunnel, more than \$9,000,000, will be a heavy burden, and that it is only fair that it should not be required to furnish unnecessary duplicate service by a slower route after this new rapid transit thoroughfare has been opened. It further states that the Tremont street subway is congested and that under

present conditions it could not successfully care for additional traffic, if the proposed Pleasant street route should prove popular. So far as Park square is concerned, it argues that the district in which the development is expected extends as far south as Copley square and is adequately served by the Berkeley street and Dartmouth street lines, in addition to the service on Boylston street and Columbus avenue, and that the new tunnel will give the people of South Boston quicker transportation to Cambridge and the Back Bay territory than a Pleasant street line to Park square could possibly provide.

Two questions confront the Commission. The first is whether public convenience and necessity require street railway service in Pleasant street; the second, if this is answered in the affirmative, is whether or not it is within the power of the Commission to take action which will result in the prompt establishment of such service. With respect to the first question, the Commission is not convinced, upon the evidence, that public convenience and necessity at present require street railway service the entire length of Pleasant street. It is quite possible that developments in the Park square district may, in the future, render such service advisable, but in view of the facilities already available it cannot now be said that additional facilities are necessary. This conclusion, however, does not apply to that part of Pleasant street between Washington street and the entrance to the Tremont street subway. So long as service is maintained between South Boston and this subway, it is clear that tracks upon this part of Pleasant street would open up a more direct route, to the mutual advantage of the company and the public. Whether or not there will be a public need for such service after the Dorchester tunnel is completed is more difficult to determine, but it is the present opinion of the Commission that reasonable service for the South Boston district will call for direct connection with the Tremont street subway by at least one surface line even after the tunnel is opened for use. At all events, the demand for such service can only be determined by actual trial, and a fair test will not be possible unless tracks are located upon Pleasant street. Furthermore, this short stretch of track would be of distinct advantage in any event for emergency use, making it possible to divert the traffic upon Washington street by a convenient route into the subway and providing a connection with the station which would be located at Pleasant street if the subway should, in the future, be used for rapid transit train service.

The Commission finds, therefore, that public convenience and necessity require that tracks be located and street railway service be established in Pleasant street between Washington street and the southern portal of the Tremont street subway. It remains to determine whether or not it is within the power of the Commission, in accordance with the terms of the statute, to take action which will result in the prompt establishment of such service. Evidently the General Court has assumed that such power exists, and the Commission would in any event feel in duty bound to proceed in accordance with this assumption; but it is unnecessary, in the view which we take of the law, to rest action wholly upon this circumstance. The company has queried whether the Commission, or any public body, has power to require private individuals to invest capital in an undertaking to which they have been unwilling voluntarily to commit themselves. If the laying of tracks on Pleasant street were, in point of fact, clearly a new undertaking, involving the extension of the service of the company beyond the territory which it now serves and into a territory open to other investment, this query would have much pertinency. In the present instance, however, the location of the proposed new tracks is in the very heart of the territory which the company already serves, and is a location which could not possibly be reached by any other company. The building of these tracks, under the circumstances, could not fairly be regarded as a new undertaking, but would rather be an incident of the general undertaking to which the company is now definitely committed. If the Commission has the power, and we think it has, to order the company to invest capital in new equipment in order that adequate facilities may be furnished to the public which it has undertaken to serve, it must follow that it has the power to order the building of new tracks, where such tracks are necessary for a similar purpose.

But this power is not an unqualified power, for a company cannot be compelled to do what it is unable to do. A prerequisite is the ability to perform what is required, and before the Commission can properly undertake to make an order in the premises it must have valid reason for believing that the credit of the company is such that by the sale of new securities or other means it can secure the capital which compliance with the order would render necessary. It must further be prepared to show, if public convenience and necessity is to be the test, that the provision of capital for the purpose stated in the order would

not seriously interfere with the provision of capital for other purposes which are of superior public importance.

In the present instance, if the building of the contemplated new tracks involved a relatively large direct investment of capital by the Boston Elevated Railway Company, and if the Commission were acting entirely upon its own responsibility, the propriety of an order requiring such an investment might well be doubted. As indicated by the special commission which reported to the General Court in February last, this company cannot, under existing conditions, secure new capital for additions and improvements to its property by the issue of either stock or bonds, and its floating indebtedness is already large. Tracks upon Pleasant street, however, would not constitute an addition to the property directly owned by the Boston Elevated Railway Company, but rather an addition to the property which it leases from the West End Street Railway Company, and the latter company is in a position at least to market an additional issue of bonds. A more important consideration is the fact that the amount of capital necessary for the construction of such tracks would be relatively very small. Upon the company's own estimate, which seems to be liberal, it would not exceed \$38,000. It is a reasonable conclusion, we think, that this amount of capital can be obtained and that it may be secured without interfering in any substantial degree with other improvements of superior importance. Under the circumstances, therefore, and especially in view of the mandate from the General Court under which these proceedings have been instituted, the order which appears below has been entered, requiring the tracks to be laid and service to and from South Boston to be established over this location. The Commission realizes the difficulty of procuring construction materials, and particularly special work, under existing conditions, and has, therefore, set no arbitrary date for the completion of the undertaking. It will, however, keep informed as to the progress made, and, if it appears at any time that the company is not proceeding with due diligence, will be prepared to take such further action as the situation may seem to demand.

ORDER.

It appearing that the Commission, acting under the provisions of chapter 186 of the Special Acts of 1917, has investigated the necessity and convenience to the general public of street railway service in Pleasant street in the city of Boston and has, on the

date hereof, made and filed a report containing its findings of fact and conclusions thereon, which said report is hereby referred to and made a part hereof, — it is

Ordered, That the West End Street Railway Company, by the Boston Elevated Railway Company, lessee, be hereby directed forthwith to take such steps as are within its power to secure a location for a double track street railway and connections with existing tracks, approved as hereinafter provided by the Engineering Department of the Commission, upon that part of Pleasant street in the city of Boston situated between Washington street and the southern portal of the Tremont street subway.

It is

Further ordered, That, if said location is duly granted and approved by the appropriate public authorities, the West End Street Railway Company, by the Boston Elevated Railway Company, lessee, be hereby directed, as promptly as possible, to construct a double track street railway upon said location on Pleasant street, connecting with the existing tracks upon Washington street and Broadway Extension and with the tracks entering the Tremont Street subway, in such manner and in accordance with such plans as may be approved by the Engineering Department of the Commission.

It is

Further ordered, That, upon the completion of said street railway tracks and connections upon Pleasant street, the Boston Elevated Railway Company be hereby directed forthwith to establish and commence the operation, to and from that part of the city of Boston known as South Boston, of a line of cars running over the said tracks, and over existing tracks upon Broadway Extension and other public ways and in the Tremont street subway, between such termini and upon such a schedule as the Commission shall approve.

And it is

Further ordered, That a copy of this order be forthwith served upon the Boston Elevated Railway Company and the West End Street Railway Company.

By the Commission,

ANDREW A. HIGHLANDS,

JULY 11, 1917. [P. S. C. 1737]

Secretary.

Petition of Boston Elevated Railway Company for approval of discontinuance of line operated between Field's Corner car house and Dorchester street transfer station, South Boston, via Dorchester avenue and Dorchester street.

Petition of Boston Elevated Railway Company for approval of discontinuance of the Harvard Square-Park Street subway-Cottage Farm line and the substitution therefor of a line between Harvard Square and Cottage Farm bridge.

These are petitions by the Boston Elevated Railway Company to discontinue certain service now operated by the company in compliance with orders of the Commission. The first petition relates to service between Field's Corner, Dorchester, and South Boston, which was established pursuant to an order of the Commission dated December 10, 1913 (1 P. S. C. Rep. p. 143). A subsequent petition by the company to discontinue this service was denied in an order of the Commission issued February 8, 1916 (4 P. S. C. Rep. p. 191). In the second petition the company asks authority to terminate the Harvard Square-Cottage Farm line at the junction of Essex street and Commonwealth avenue near the end of the Cottage Farm bridge instead of operating the line through to the Park street station as at present. This line was voluntarily operated by the company to its present terminus at Park street prior to the opening of the Boylston street subway. A short time thereafter the portion of the line involved in the present petition was discontinued but was restored by order of the Commission on July 24, 1916 (4 P. S. C. Rep. p. 165). (See also 3 P. S. C. Rep. p. 205.)

The essential facts in relation to the service upon the two lines in question and the considerations which influenced the Commission in the establishment of this service are shown in the records of the hearings and the reports of the Commission in the cases cited above and need not be repeated here. No evidence was presented by the company of any rearrangements of its service or any change in local conditions which would warrant a reversal of the orders made by the Commission. It was, however, suggested by the company that war conditions might make it necessary to curtail service, owing to the inability of the company to obtain necessary labor, fuel and supplies. Any change in present methods of operation upon that ground would appear, however, to be premature at this time. If the company should be confronted hereafter with the conditions which it now appre-

hends, or if any other substantial change in conditions develops, the petitions for the discontinuance of service upon these lines may be renewed, but it does not appear that sufficient cause exists at this time for the discontinuance of the service in question. '

It is, therefore,

Ordered, That the petitions be dismissed.

By the Commission,

ANDREW A. HIGHLANDS,

NOVEMBER 1, 1917.

[P. S. C. 1731, 1732]

Secretary.

Order of the Commission relative to service on the Boston Elevated railway between Field's Corner car house, Dorchester, and Dorchester street transfer station, South Boston; between Oak Square, Brighton, and Central Square, Cambridge; and between Harvard Square and Park Street subway, via Cottage Farm bridge.

After consideration, in view of present emergency conditions, It is

Ordered, That orders of the Commission dated December 10, 1913 (1 P. S. C. report, p. 143) relative to service on the Boston Elevated railway between the Field's Corner car house, Dorchester, and the Dorchester street transfer station, South Boston; dated February 13, 1915 (3 P. S. C. report, p. 198) relative to the establishment of service between Oak Square, Brighton, and Central Square, Cambridge; and dated July 24, 1916 (4 P. S. C. report, p. 165) relative to the establishment of service between Harvard Square, Cambridge, and the Park Street station in the Tremont Street subway, by way of Cottage Farm bridge, be suspended until May 1, 1918, unless otherwise ordered by the Commission.

By the Commission,

ANDREW A. HIGHLANDS,

DECEMBER 21, 1917.

[P. S. C. 263, 853, 1142, 1268]

Secretary.

Petition of the Mattapan Civic Improvement Association relative to street railway service in the Mattapan district of the city of Boston.

This is a petition for the restoration of the through service formerly furnished by the Boston Elevated Railway Company

between Mattapan square and the North station by way of Blue Hill avenue, Columbia road, Dorchester avenue and the South station. On July 1, 1911, the company, in connection with certain rearrangements of service then made, discontinued, during normal hours only, the portion of this line between Mattapan square and Franklin Field, and made the latter a transfer point. A petition for the restoration of the former service was denied by the Board of Railroad Commissioners on August 12, 1912 (44 R. R. Com. Rep. page 123). The board, however, recommended that the company provide better facilities for transfer by erecting an island station and shelter at Franklin Park, and that passengers from Mattapan be permitted to transfer at Franklin Park to the Columbia road and other inward lines. The company complied with this recommendation and also continued to operate through service from Mattapan square on a ten-minute schedule during rush hours.

On May 24, 1916, the rush-hour service on this line was discontinued, and on the same date the company rearranged its service on the Mattapan-Dudley street line during rush hours by substituting two-car trains on a five-minute schedule for the single cars on a three-minute schedule previously operated. Upon the opening of the Egleston square terminal the Dudley street line was diverted to that point, and the service was increased by operating the line on a four-minute instead of a five-minute headway.

It was admitted that these changes gave greatly improved service and accommodations for the large number of passengers, numbering about 12,000 daily, who travel between Mattapan and the business center of Boston, but the discontinuance of through service on the Columbia road line, undoubtedly inconvenienced a certain number of passengers from the Mattapan district who have occasion to travel to local points in Dorchester or South Boston, or who prefer to use a surface car to the South station and points beyond. The number of such passengers, however, does not appear to be large. Counts taken by the company when the line was operated through to Mattapan square showed that this line carried during the morning and evening rush hour periods, from 6 to 9 A.M. and from 5 to 7 P.M. about 550 passengers daily in each direction. These passengers are now subject to the delay and annoyance, which they share with other long-distance riders on the company's lines, of being obliged to change cars at a transfer point. Any attempt, however, to operate a surface line of more than $7\frac{1}{2}$ miles in length

over a circuitous route and narrow and congested city streets is bound to result in slow, irregular and generally unsatisfactory service. Moreover, such service is wasteful to operate and could not be furnished with the company's available equipment and facilities, except by depriving other communities of needed service.

It is expected that the Dorchester tunnel will be completed to Andrew square in the near future, and in connection with the rearrangements of service which will then become necessary, it may be found possible to operate a through line from Mattapan square to Andrew square, which would meet all reasonable demands of the petitioners in the present case. That matter is left open for future consideration by the Commission in case such service is not voluntarily established by the company. Under present conditions, however, the Commission does not feel that the establishment of the service desired by the petitioners would be consistent with sound principles of street railway operation. It is therefore

Ordered, That the petition be dismissed.

By the Commission,

ANDREW A. HIGHLANDS,

NOVEMBER 1, 1917. [P. S. C. 1529]

Secretary.

Petition of the New Bedford and Onset Street Railway Company for modification of the recommendation of the Board of Railroad Commissioners under date of April 3, 1913, relative to service between Onset Junction and the village of Onset.

Onset Junction station of the New York, New Haven and Hartford Railroad Company is located about one and one-half miles from the village of Onset. There is a short spur track, about 435 feet in length, running from the main line of the New Bedford and Onset street railway to the railroad station. Upon a petition of the residents of Onset and vicinity, the Board of Railroad Commissioners, on April 3, 1913, made the following recommendation: —

That the company, from May 15 to October 1 of each year, maintain a car service between the village of Onset and the Onset Junction station of the New York, New Haven and Hartford Railroad Company, which shall

connect with all trains of the latter company. This case may be reopened by either party at any time after October 1, 1913, for such modification of this recommendation as may then seem proper (1st P. S. C. Rep., p. 156).

The street railway company now asks to be relieved from operating this special depot car on Tuesdays, Wednesdays, Thursdays and Fridays between May 15 and June 10, and between the first Wednesday after Labor Day and October 1 of each year.

The summer time-table of the New York, New Haven and Hartford Railroad Company goes into effect about June 10, when additional trains are put on to accommodate the summer travel; but during practically the remainder of the year only four passenger trains stopping at Onset Junction are operated each way. The proposed change of service is sought during that portion of the period covered by the Railroad Commission's recommendation when the full summer schedule is not in effect.

The main line of the New Bedford and Onset street railway, as above stated, runs within about 435 feet of the station and cars are operated on this line hourly. The company submitted counts taken last year on the special depot car, on the days on which they now propose to discontinue this service, which showed the average number of passengers per trip to be ten. The riding was heaviest on those trips which made a fairly close connection with the regular cars on the main line, and the riding on these main line cars at this point would permit the taking on of this additional traffic without overcrowding. The daily riding was largest, also, on the days on which it is proposed to continue the service, namely, Saturdays, Sundays, Mondays and holidays.

In view of the above circumstances, the Commission is disposed to modify the recommendation of the Board of Railroad Commissioners made April 3, 1913, and to allow the company to substitute the service petitioned for. It is therefore

Ordered, That the recommendation of the Board of Railroad Commissioners under date of April 3, 1913, be modified so that the New Bedford and Onset Street Railway Company shall maintain daily from June 10 to the first Wednesday after Labor Day, and on Saturdays, Sundays, Mondays and holidays between May 15 and June 10, and on such days between the first Wednesday after Labor Day and October 1 of each year, a

regular car service between Onset Village and the station of the New York, New Haven and Hartford Railroad Company at Onset Junction, which shall connect with all trains of the latter company.

By the Commission,

ANDREW A. HIGHLANDS,

MAY 14, 1917. [P. S. C. 1685]

Secretary.

Petition of residents of Fitchburg, Gardner and Westminster relative to discontinuance of service upon the Lake Wachusett branch of the Northern Massachusetts street railway in Westminster.

The petition in this case sets forth that the Northern Massachusetts Street Railway Company has discontinued the operation of cars upon its branch line from Westminster to Lake Wachusett, and prays action of the Commission to require the company to resume operation upon the line.

At a public hearing evidence was presented that the line is $2\frac{1}{2}$ miles long and is the only means of street railway travel from Fitchburg, Leominster and Westminster to Wachusett Lake and Wachusett Mountain. While the lake and surrounding park had been conducted as a summer resort the line had been largely patronized during the summer months. In 1906 the City of Fitchburg took the lake for a reservoir for water supply and erected a fence at a distance of four rods around it, causing the abandonment of the park as a summer resort, with a necessary consequent decrease in street railway travel. In 1915 the line was operated upon half-hourly trips during the summer months only, and in 1916 service was wholly discontinued. Section 23 of the Public Service Commission law (chapter 784 of the Acts of 1913) gives to the Commission authority to require adequate service upon a street railway line where service alone is discontinued in whole or in part without intention upon the part of the company to abandon the use of the tracks. (See also section 97 of Part III of chapter 463 of the Acts of 1906.) Section 76 of Part III of chapter 463 of the Acts of 1906 provides in part that —

. . . If a street railway company without right or lawful excuse discontinues the use of any track and when requested by the board of aldermen of the city or by the selectmen of the town in which such track is located

refuses to operate the same, the mayor of such city, if duly authorized by vote of the city council or the selectmen of such town if duly authorized by vote of the town, may petition the supreme judicial court to compel said company to resume the use of such track and to perform all its corporate duties relating thereto.

The company was called upon at the hearing to state whether its purpose was to discontinue service, merely, and retain the use of its tracks, or voluntarily discontinue the use of its tracks and virtually abandon its location. The company declared that such discontinuance of the use of its tracks was with the intention of abandoning its location. In pursuance of this purpose 1,700 feet of track have been removed since the date of the hearing and the rails relaid at Orange upon the main lines of the company. This action clearly indicates an intention on the part of the company to abandon its location, and probably amounts to an abandonment in fact. As it appears that the company, with the declared intention of abandoning its location, has discontinued its use of the whole of the tracks of the branch line covered by the locations under which they were built and has actually taken up its tracks for a considerable distance; that the branch line is not an integral part of its main system; and nothing appearing either in the charter of the company or of its predecessor, or in the grant of its location requiring the branch line to be continued in operation, the Commission is of the opinion that the company ought not to be required to operate the line in question, which it also further appears has not sufficient patronage to meet expenses of operation.

The petitioner's remedy, if any, would appear to be by proceedings brought in the Supreme Judicial Court under the provisions of section 76 of Part III of chapter 463 of the Acts of 1906.

It is therefore

Ordered, That the petition be dismissed.

By the Commission,

ANDREW A. HIGHLANDS,

AUGUST 10, 1917. [P. S. C. 1416]

Secretary.

TELEPHONE AND TELEGRAPH SERVICE.

Investigation on motion of the Commission relative to the extension of telephone service by the New England Telephone and Telegraph Company.

PHILIP L. SPALDING	}	for the New England Telephone and Telegraph Company.
MATT B. JONES		
WILLIAM W. CLARKE	}	for the International Brotherhood of Electrical Workers.
GEORGE F. MAHONEY		

Memorandum.

On August 24, 1917, the following communication was sent by the Commission to Mr. Philip L. Spalding, president of the New England Telephone and Telegraph Company: —

The Commission has learned, from what purported to be official statements issued to the press, that the New England Telephone and Telegraph Company feels obliged "to avoid new construction not directly associated with the war," and to conserve its existing resources in every way possible, and that "this makes it necessary to postpone accepting applications for exchange service and facilities of all kinds, except where it is required in the general interests of the public." In order that both the Commission and the public may be more fully informed in regard to the meaning of this announcement and the reasons therefor, it has seemed desirable that the matter be considered at a public hearing. Such a hearing will be held at the offices of the Commission at No. 1 Beacon Street, Boston, on Wednesday, August 29, 1917, at 10.30 A.M., and you are requested to be present, together with any other representatives of the company whose presence may be desirable in order that the facts in regard to the situation may be adequately developed.

Pursuant to this notice, a hearing was held on August 29 and continued on the following day.

The statements which led to this inquiry appeared in the newspapers of Boston on August 17, 1917. At the hearings, however, the Commission was informed by the president of the company that these statements had not been issued by the management; that they had emanated from some subordinate without express authority; and that they had been based upon a letter approved by the management and sent on August 10, 1917, by the general commercial superintendent to the division commercial superintendents, and later sent by them to all employees in the various commercial departments. In this letter the employees were informed that it would be necessary "to

postpone accepting applications for exchange service and facilities of all kinds, except where such service or facilities are required in the general interests of the public." It was further stated that service would be considered "in the general interests of the public" in cases where the application for service was —

(1) Clearly and positively for, or in the interests of, Municipal, State or Federal Government.

(2) Clearly and positively necessary in the proper administration of the transportation facilities of the country.

(3) Clearly and positively necessary for the general safety or health of the community.

(4) Clearly and positively necessary on account of sickness.

(5) For business service where no service is available at present and where some form of service is clearly and positively required in the general interests of the community; and in other similar cases.

In the letter, and also in the press statements, the impression was conveyed that the new policy had been adopted because of the pressure of Government demands and because of a shortage in materials and supplies and in labor. The president of the company, however, declared that this impression was wrong, that the press statements were "very misleading," and that they gave "absolutely a wrong point of view in many respects." It now appears that, while there has been delay at times during the past year in securing materials and supplies, no shortage at present exists or is in sight, nor is there difficulty in securing men. Only recently, about 140 employees of the plant department were laid off. The new construction directly required during the year for Army, Navy and other Government work cost about \$300,000. Directly and indirectly, the company estimates that \$1,000,000, all told, may have been spent because of Government demands, out of a total construction program of about \$5,750,000; but most of the necessary work of this nature has been done and no claim is made that any exigency exists on this account at the present time.

The action taken, the president states, has been based on the general conditions resulting from the war. It is urged that "public authorities have been making earnest pleas for economy and the conservation of resources wherever possible, not only in large enterprises, but in every walk of life;" that there is every reason to believe "that the conditions under which business in general will be conducted will become increasingly onerous while the war continues," and that only by eliminating unneces-

sary telephone installations at the present time can there be assurance that the company will be able indefinitely to continue the extension of its service to all cases of real need. It is further urged, as of secondary importance, that unrestricted extension of facilities at prevailing high prices would swell the investment in a way which might ultimately react upon the public in the matter of rates.

Certain facts which have an important bearing upon the situation are as follows: The New England Telephone and Telegraph Company is controlled, like many other similar companies throughout the United States, by the American Telephone and Telegraph Company, which also controls the Western Electric Company, a corporation engaged in the manufacture of telephone instruments and apparatus and the medium through which the affiliated telephone companies secure practically all their materials and supplies. The policy of restricting telephone installations, however, did not start with the parent company, but seems to have been adopted by the New England company upon its own responsibility; and no evidence was offered that any of the other operating companies throughout the country have pursued a similar course. It also appears that the Western Electric Company has not warned the New England company of any impending shortage in materials and supplies or urged a restriction of purchases on this account. Indeed, during the summer, the Western Electric Company has been endeavoring by an advertising campaign to stimulate the sale of electric supplies of far less basic public importance than telephone apparatus. Nor has the new policy been directly advised or suggested by the National Council of Defense or any similar public body. The execution of the policy has apparently been left very largely in the hands of the local "counter" men, who deal in the first instance with prospective customers. Since its adoption, and up to the time of the public hearings, about 1,800 out of 3,000 applicants had been denied new telephone service. Few of those refused had actively pressed their claims by appeal to the officers of the company or complaint to the Commission, but the right of the applicant to appeal to higher authority was not at first made plain. This situation has, however, been corrected since the hearings by new instructions to the employees.

No one can seriously question the basic principle upon which the company now states that its new policy has been founded. As the resources of the country are devoted more and more to

the prosecution of the war, there will be a continually increasing need for conservation and the exercise of strict economy on the part of every individual. It is not so clear, however, that this principle has been reasonably applied in the present instance. At the outset, no official announcement was made to the public or to this Commission of any change of policy, and the announcement which eventually was made was apparently accidental rather than premeditated. Instructions were given to the employees and they were allowed to act thereunder, in dealing with prospective customers, largely as they saw fit. Certainly the customers were given no definite means of knowing, in default of an appeal, what the instructions were or whether their privileges were being infringed.

So far as the policy itself is concerned, it would have been perfectly consistent with the public interest, and desirable, for the company to have circularized its subscribers, or to have issued statements to the press, setting forth the need for conservation of resources and strict individual economy in the present emergency and strongly urging the public to refrain from seeking additional and unnecessary telephone facilities. The Commission, indeed, would very gladly have co-operated in such a movement. The policy actually adopted, however, goes beyond this and amounts to an attempt to determine for the individual what his course should be. Of necessity, it involves an examination into the affairs of each applicant for service — an examination made in the first instance by subordinates — for the purpose of determining whether or not reasonable necessity exists for the application. The instructions laid down go so far, also, as practically to deny reasonable necessity for any new residence telephone, except in case of sickness. It is true that war conditions frequently require an exercise of authority which would not be acceptable in times of peace, but this principle is capable of abuse and ought not to be applied too readily to the management of private corporations. In this case, the new policy has so many possibilities of uninformed, unfair or discriminatory treatment and involves such an invasion of the privacy of the individual that it ought not to be permitted, in the judgment of the Commission, until the feasibility of less stringent expedients has been tested and its necessity has been better demonstrated.

Indeed, we are inclined to believe that such a policy ought not to be adopted until it has been directly advised by some central national authority representing and acting in the public

interest, nor until it is made to apply, not solely in certain New England states, but uniformly throughout the entire country. The company has referred to restriction of railroad passenger service as an analogy, but this reduction was made primarily to assist the roads to meet known and positive needs of the freight service, and no similar situation exists in the present instance. After all, the amount of conservation of basic materials and of other wealth which can be effected by limiting telephone service is relatively insignificant. Infinitely greater opportunities exist which relate to mere luxuries of living. The Commission, therefore, expresses the opinion that the policy adopted by the company is not as yet justified. It may well urge upon its patrons, both present and prospective, the desirability of economy and the avoidance of unnecessary expenditures, and in doing so it may be assured of the Commission's hearty co-operation; but it ought not, for the present at least, to go further by attempting direct interference with the discretion of the individual.

For the Commission,

FREDERICK J. MACLEOD,

SEPTEMBER 21, 1917.

[P. S. C. 1885]

Chairman.

Investigation on motion of Commission in the matter of the proposed discontinuance of the so-called "obsolete" six-party unlimited residence telephone service furnished by the New England Telephone and Telegraph Company in the district served by the telephone exchanges in Salem, Beverly, Danvers, Peabody and Marblehead.

This matter was taken up by the Commission on its own motion as the result of complaints made to the telephone and telegraph department. The complaints arose because of the proposed complete discontinuance of a so-called "obsolete" six-party unlimited residence service which, until 1911, had been open to all subscribers of the New England Telephone and Telegraph Company in the district served by the local exchanges in the cities of Beverly, Peabody and Salem, and in the towns of Danvers and Marblehead. Up to that time the company's schedule offered a one-party rate of \$42.00 per year, a two-party rate of \$33.00 and a six-party rate of \$25.00 for unlimited residence service throughout this district, in addition to the several

grades of local service confined to the territory of a single exchange.

In 1911, the company declared the six-party residence service in this district obsolete, eliminating it from the schedule. Since that time it has accepted no new contracts on this basis, but has allowed existing subscribers having such contracts to retain this service until such time as they might agree voluntarily to accept a different arrangement. This condition continued until July, 1916, when the company notified the subscribers still using the six-party service that, on or before December 1, 1916, it would be necessary for them to change to some other grade. If they desired to retain district service, the next available rate was the two-party at \$33.00, involving an increase of \$8.00 per year. This increase seemed to many of the subscribers wholly unreasonable, and, at the suggestion of the Commission, the company agreed to postpone the contemplated change, pending an investigation.

At the public hearing, representatives of the company stated in detail the plant and operating conditions which seemed to them to render the change advisable. Among other reasons, they urged that the service troubles which are incident to multi-party line service are disproportionately increased when it is necessary to trunk calls either to or from such lines, as is the case where such service is given in a district made up of several local exchanges, and that the presence of such lines is unfair to all other subscribers, making it impossible for the company to maintain the general standard of service to which the community is entitled.

The question is similar to one which was considered by the Commission in 1914, upon petition of the United Improvement Association. In that case the company had declared "obsolete" four-party and six-party suburban residence service in the metropolitan district, and the petitioners asked that these forms of service be restored to the regular rate schedule. In its decision, rendered on February 28, 1914, the Commission reached the following conclusion (2d Annual Report, pp. 246, 247):—

It is, of course, obvious that any subscriber who is sharing his line with five others cannot expect as good service as he would get on a private or a two-party line. The most unfortunate feature of such service, however, is that the service difficulties experienced on multi-party lines affect not only the subscribers on these lines but all other subscribers who are endeavoring to reach them.

The Commission is satisfied that six-party line service is entirely unsuited to a multi-exchange district like the metropolitan suburban, where the service problems at best are most complex, and is convinced that it would be distinctly hostile to the interests of the community to take any action which might result in increasing the number of six-party lines in this district.

.

With somewhat less force, the objections to the six-party line apply to the four-party line service as well. The Commission, nevertheless, believes that the four-party line may be given further trial without the probability of serious impairment of the general service. There are reasons that seem to make such a trial distinctly desirable, especially if the service be made available to new subscribers. It should demonstrate conclusively how much real demand there is for this grade of service. It would give the Commission ample opportunity to satisfy itself as to the effect of these lines on the service of other subscribers. It would also make the four-party line available for such six-party line subscribers as may wish to change to it, and it might well result in enabling the company to keep the lines better filled, thus securing increased efficiency from its plant.

The Commission does not feel that sufficient data are available to make a final decision on the matter at this time and accordingly recommends that the company restore to its schedule for further trial the so-called four-party line suburban residence service. If, in the light of further experience and trial, it appears that this grade of service is unduly burdensome to the general service, or that it is otherwise unsuitable, its retention may be brought up for reconsideration by either the company or the Commission without prejudice by reason of this recommendation or its acceptance.

As a result of this decision, four-party unlimited suburban residence service has since been maintained in the metropolitan district. In the three years which have elapsed since the decision was rendered, the company has not availed itself of the opportunity left open to ask for a reconsideration, nor has it intimated, so far as the Commission is aware, that "further experience and trial" have demonstrated that "this grade of service is unduly burdensome to the general service." On the other hand, the trial has apparently shown that there is a "real demand" within the metropolitan district for these four-party lines. The number of subscribers using this form of service on December 31, 1916, was 10,604.

In view of these circumstances, the Commission believes that the precedent established in 1914 within the metropolitan district may reasonably be followed in the case of the smaller and less complex district now under consideration, and that while

the company ought not to be called upon to continue the "obsolete" six-party service, it should be required to establish and maintain within this district a four-party service at a relatively low rate. By analogy, also, this rate ought to be \$27.00 per year. In the metropolitan district the one-party suburban residence rate is \$45.00 per year, the two-party rate is \$36.00 and the four-party rate is \$30.00. The one-party and the two-party rates, it will be seen, are in each case \$3.00 higher than the corresponding rate in force within the district in question, and upon this basis a four-party rate in this Salem district would be \$27.00.

Until the opportunity has been afforded the Commission to make a complete study of the telephone rate situation within the commonwealth, it cannot undertake to say, of course, that the existing one-party and two-party rates within the Salem district are inherently reasonable, or the proposed four-party rate, but the latter rate is at least consistent with the schedule now in effect and may properly be prescribed pending a thorough consideration of the schedule as a whole. The Commission has therefore so ordered. In the other similar districts throughout the commonwealth no six-party service at present exists, and in the absence of complaint or evidence of popular demand, the Commission has not deemed it necessary to provide for the extension of four-party service to these districts, but has left this question to be taken up when such demand appears.

ORDER.

The Commission, having upon its own motion investigated the proposed discontinuance of the so-called "obsolete" six-party unlimited residence telephone service furnished by the New England Telephone and Telegraph Company in the district served by the telephone exchanges in Salem, Beverly, Danvers, Peabody and Marblehead, and having on the date hereof made and filed a report containing its findings of fact and conclusions thereon, which said report is hereby referred to and made a part hereof, it is

Ordered, That the New England Telephone and Telegraph Company be hereby notified and required to establish within the district served by the local exchanges in Salem, Beverly, Danvers, Peabody and Marblehead, within sixty days of the date hereof, upon not less than five days' notice to the Commission and the general public by plainly printing and filing, in the man-

ner prescribed in section 20 of chapter 784 of the Acts of 1913, a schedule amending its existing charges for telephone service within said district by providing for four-party unlimited residence service at a rate of \$27.00 per annum.

It is

Further ordered, That a copy of this order be filed with said schedule at the office of the Commission and that a copy hereof be forthwith served upon the New England Telephone and Telegraph Company.

By the Commission,

CHARLES E. MANN,

JUNE 5, 1917. [P. S. C. 1544]

Executive Secretary.

Order of the Commission relative to the furnishing by telephone companies of free or reduced rate service for charitable purposes.

Under section 18 of chapter 784 of the Acts of 1913, common carriers, a term which includes telephone companies under the provisions of section 2 of the Act, are prohibited from furnishing free service with certain exceptions, one of which is that the Act shall not prohibit a common carrier from granting free or reduced rate service "for such charitable purposes as may be approved by the Commission." On May 14, 1917, all the telephone companies operating within the commonwealth were notified that this matter would be taken up at a public hearing and were asked, prior thereto, to furnish a list showing the names of those to whom free or reduced rate service was being furnished for charitable purposes, "together with their addresses, the class of service furnished and the regular rate therefor and the amount of discount allowed."

At the hearing, which was held on May 22, 1917, it appeared that such service was being furnished by two companies, namely, the New England Telephone and Telegraph Company and the Automatic Telephone Company of New Bedford. As of January 1, 1917, the New England company gave reduced rate service for charitable purposes to 402 subscribers, the discounts amounting to \$7,680 per annum, and ranging from \$3.15 to \$126, and in percentages from about $4\frac{1}{2}$ per cent to $33\frac{1}{3}$ per cent of the regular rate. The New Bedford company furnishes free service to 6 subscribers and reduced rate service to 3, the discounts ranging from \$8 to \$18. It was stated in behalf of the New England company that no uniform rule was followed in dispens-

ing this charity, and it appears that the matter has been left very much to the discretion of local managers.

In the case of railroad and street railway service, the question has already received the consideration of the Commission, and, in a memorandum issued on August 6, 1914, the words of the statute were interpreted as follows (2d Rep. P. S. C., pp. 224, 225): —

The words "charitable purposes" are capable of broad construction. (See *Jackson v. Phillips*, 14 Allen, 539.) Churches, religious organizations, schools and colleges are all public charities within the meaning of the law. There are special statutes providing for reduced rates for school children. In the judgment of the Commission it would not be consistent with the public interest to permit common carriers to grant free or reduced rate service for any and all kinds of religious and educational institutions. Rather should the operation of this exception to the general prohibition be limited to needy classes, — such as the inmates of hospitals, of homes for the aged, of orphans' homes, of day nurseries, to such enterprises as mothers' outings and other similar undertakings supported by benevolent and charitable societies and intended for the relief of suffering or to furnish opportunities for health to needy children and women and to others unable from their own resources to provide the requisite opportunities. Trips for school children, perhaps to visit the State House, Sunday school picnics, outings of athletic associations and clubs, and other similar purposes, which are mainly for pleasure and not intended, primarily, to relieve any real suffering or need, are not, in the judgment of the Commission, charitable purposes to which the carriers ought to contribute by granting free or reduced rate service not available to the general public.

Whether public utility corporations are a proper medium for the dispensation of charity is a question which was not considered in that memorandum and need not now be considered, for the principle is recognized in the statutes, and the duty of the Commission is merely to determine the reasonable restrictions which should surround its application. Obviously, also, the ruling in the railroad and railway case cannot be literally followed in the present instance, for reduced rate service granted for charitable purposes by telephone companies is a continuing rather than a temporary concession, and is not extended directly to the needy, but indirectly through the organizations which minister to their needs; nor can the Commission be reasonably expected separately to consider and pass upon the merits of each individual case. The situation is one which calls for some general rule which can be approved by the Commission, and the application of which it can check from time to time by means of records specially kept for the purpose.

Upon consideration, it seems to the Commission that the rule which is laid down in the order entered below is one which sufficiently meets the needs of the situation. It is a rule broad in its terms, but not difficult to apply in practice and in no way inconsistent with the opinions expressed by the Commission in the case of railroads and railways. The initial responsibility for granting reduced rate service in such cases rests, of course, upon the companies themselves, but any decision made by them which is in harmony with the rule thus indicated will meet with the approval of the Commission. Under the terms of the order the companies will also be required to file with the Telephone and Telegraph Department of the Commission, in an approved form, data in regard to the organizations to which the concession is granted, which will enable the department to check the action taken.

Under the statute the Commission is not required to approve the amount of the discount or concession allowed. Free service may be granted, or any reduction which may seem to the company proper. It is doubtful, however, whether there is good reason for the present lack of uniformity in this respect, and the Commission is inclined to the belief that some rule of general applicability is desirable.

ORDER.

After a public hearing and further consideration, —

It is

Ordered, That the approval of the Commission be hereby given to the furnishing by telephone companies operating within the commonwealth of free or reduced rate service for charitable purposes to organizations administering primarily to the mental, moral or physical welfare of the needy poor, which are dependent for their support mainly upon private contributions and in the management of which the element of private gain is entirely wanting.

It is

Further ordered, That any applicant for such service be required to furnish, in duplicate, upon a form similar to the form hereto annexed, the information therein indicated, and, if such application is granted, that one copy of the information so furnished be filed with the Telephone and Telegraph Department of the Commission, together with any comments which the company may care to make.

It is

Further ordered, That any telephone furnished in connection

with such free or reduced rate service be listed in the name of the organization to which such concession is granted.

And it is

Further ordered, That a copy of this order be forthwith served upon every telephone company operating within the commonwealth.

By the Commission,

ANDREW A. HIGHLANDS.

AUGUST 27, 1917.

[P. S. C. 1756]

Secretary.

FORM OF APPLICATION.

Free or Reduced Rate Telephone Service for Charitable Purposes.

.....191

To the.....Company:

The, a charitable organization, hereby makes application for a discount from the established charges for exchange service as covered by the attached contract. For the consideration of the company in determining whether such a concession may properly be allowed the following information concerning the organization is submitted, with the understanding that a copy is to be transmitted by the company to the Public Service Commission: —

1. Description of work engaged in.

.....

.....

.....

.....

.....

2. Extent to which work is for the welfare of the needy poor.

.....

.....

.....

3. Description of organization, equipment, etc., for administering the work.

.....

.....

.....

- #### 4. Principal sources of revenue.

[illegible]

Total revenue \$.

5. Principal items of expenditure.

.....	\$.....	\$.....
.....
.....
.....
.....
.....
Total expenditures			\$.....

6. Two copies of the last annual report accompany this application.

For the.....

By.....

*President.**Treasurer.**Petition of T. J. Mann of West Roxbury for restoration of telephone service.*

The petitioner is a plumber by trade, with a place of business in the West Roxbury district of the city of Boston. He is a subscriber to exchange service and has been deprived of service by the New England Telephone and Telegraph Company, and now asks the Commission to order its restoration. It appears that in the past he has had several altercations with the company and has addressed profane and abusive language not only to officials but also to operators in the Bellevue exchange. Some time ago he was warned by the company that upon the repetition of this offence his telephone would be removed. A subsequent dispute with the company led to a renewed outbreak, and, upon complaint of the operators, service was discontinued on November 19, 1917.

At the public hearing several of the operators employed in the Bellevue exchange appeared and testified to the language used by the petitioner which had been the cause of complaint, and some stated that they would resign their positions if his service were restored. The petitioner did not contradict this testimony, but acknowledged his fault and offered to apologize in person to each of the operators, if that were desired.

Under modern conditions telephone service is essential to the successful conduct of most undertakings, and it is not unlikely that the business of the petitioner may be seriously and permanently injured if his telephone is not soon restored. It goes without saying that the operators ought to be protected in every way against profane and abusive language. It would be intolerable if they were obliged to submit to it; but deprivation

of service is not the only remedy. Profane cursing and swearing are offences against the laws of the Commonwealth and punishment may be sought by ordinary proceedings in the criminal courts.

At all events, the petitioner has now been deprived of service for more than three weeks, admits his error, is willing to make amends, and states that the offence will not be repeated. Under the circumstances we are of the opinion that retribution has been sufficient and should not go to the length of a permanent deprivation of service and that his service ought now to be restored. If disputes arise in the future, the attention of the petitioner is called to the fact that, if any complaint is taken up in an orderly way with the telephone department of the Commission, better results are likely to be secured than from resort to violent language.

The present finding of the Commission that the service of the petitioner should now be restored is made upon the distinct understanding that the retention of this service is conditioned upon the petitioner's good conduct and that the repetition of the offence will justify the company in a further suspension of his telephone service, if such action is necessary to protect its employees from abuse.

It is

Ordered, That the New England Telephone and Telegraph Company forthwith restore to the petitioner, T. J. Mann, the telephone service at 101 Park street, West Roxbury, of which he was deprived by the action of the company on November 19, 1917.

By the Commission,

ANDREW A. HIGHLANDS,

DECEMBER 18, 1917. [P. S. C. 2016]

Secretary.

Petitions of Board of Selectmen of Sturbridge and of John J. Burke and others of Gloucester relative to the rates charged by the New England Telephone and Telegraph Company for service in potential exchanges.

These petitions both relate to the rates charged by the New England Telephone and Telegraph Company for service in so-called "potential" exchanges. In considering the issues which they raise, it is necessary to understand the general plan upon which telephone exchanges have been established by this com-

pany throughout the territory which it serves. It is its stated policy to fix the boundaries of these exchanges along lines of community interest—in other words, to establish a separate exchange for every group of subscribers whose interests seem to be identified with some distinct community center. In such an exchange area the so-called base rate, or minimum yearly charge, provides exchange service for all subscribers living within a certain distance from the central office, but subscribers living beyond this limit (one mile on business telephones, two miles on residence telephones and six miles on rural lines) pay what is known as a “local” mileage charge in addition. This charge varies, according to the grade of service, from 50 cents to \$2.50 for each quarter mile or fraction thereof, air line measurement, beyond the base rate area. Provision is also made so that a subscriber within the limits of a certain exchange may, if he so desires, be given service in another. In such a case he pays, in addition to the base rate prevailing in the latter, a “foreign” mileage charge which is much higher than the “local” mileage charge, varying (outside of the Boston Central District) from \$2.00 to \$5.00 for each quarter mile, or fraction thereof, beyond the base rate limit. He must thenceforth pay, also, a toll charge to reach any subscriber in the exchange within whose limits he is physically located.

Ordinarily a telephone exchange has its own central office and switchboard. In a very limited number of instances, however, where the number of subscribers in the exchange is very small, this is not the case. The calls are, instead, handled through the central office of some larger adjoining exchange. Such an exchange, which has no central office and switchboard of its own, is called by the company a “potential” exchange. There are four in the commonwealth,—namely, Assonet, Fiskdale, Magnolia and Windsor, operated, respectively, through the Fall River, Southbridge, Manchester and Dalton switchboards. The arrangement is somewhat more economical for the company and makes possible more efficient service than a very small central office could provide. Subscribers have all the advantages of a separate exchange, so far as rates are concerned, but, from the operating standpoint, the existence of the exchange is purely constructive or theoretical.

As above stated, one of these potential exchanges is in Fiskdale, which is a village in the town of Sturbridge. Other telephone users in Sturbridge are connected with the Southbridge

exchange, through whose central office the Fiskdale potential exchange is operated. The Fiskdale exchange was created in 1902, and was operated originally by a local agent, at whose house a small switchboard was located. All-night service was not provided and the central office was closed during certain hours on Sundays. This caused complaint, and the company, in 1908, submitted alternative propositions to the subscribers, who then numbered 35. It offered to continue the exchange with the local agent, to operate it as a potential exchange through Southbridge, or to abolish it and take the subscribers into the Southbridge exchange. The subscribers, it seems, voted almost unanimously for the potential exchange plan and this was adopted.

The original petition of the selectmen of Sturbridge, filed with the Commission on December 6, 1915, asked that the toll charge of 5 cents between subscribers in the Fiskdale exchange and subscribers in the Southbridge exchange be abolished. A decision was rendered on March 2, 1916, in which the Commission refused to grant this request, but did order the company to abolish the toll charge between subscribers in the Fiskdale exchange and subscribers in the Southbridge exchange living within the town of Sturbridge. Conditions, however, continued to dissatisfy a number of the Fiskdale subscribers, and, as the general question of rates in potential exchanges had been raised by another petition brought by subscribers of the Magnolia exchange, the Commission offered, in connection therewith, to give renewed consideration to the Fiskdale situation, with a view to determining whether or not some form of relief other than that originally sought might be provided.

The petition just mentioned relates to conditions in the Magnolia potential exchange. Magnolia is politically a part of the city of Gloucester, but it is an outlying section geographically somewhat separated from the remainder of the city and has rather distinct local interests of its own, particularly in the summer months, as it is a well-known seaside resort. Until 1910, telephone service was furnished to Magnolia as a part of the Manchester exchange, Manchester being an adjoining seaside town of similar characteristics. In that year, Magnolia was made a separate exchange, operated through a central office of its own. In 1911 it was decided to abolish this office and to handle the Magnolia subscribers through the Manchester switchboard, thus converting Magnolia into a potential exchange.

The chief petitioner in the case lives throughout the entire

year in Magnolia, just outside the limits of the Gloucester exchange. His business is in Gloucester and his interests are with the Gloucester, as distinguished from the Magnolia, district. Until quite recently he was listed in the Gloucester exchange and paid a base rate of \$18, plus a "local" mileage charge of \$3, or \$21 per year in all. A little over a year ago he was informed that this arrangement was irregular and not in conformity with the schedule filed with the Commission, and that he must, therefore, either pay a "foreign" mileage charge of \$12, making his total yearly rate \$30, or be listed in the Magnolia exchange and pay a toll charge of five cents for every call to the Gloucester exchange. Against this situation he protests.

At the hearing it was suggested that a majority of the Magnolia subscribers would prefer to have their potential exchange abolished and be included in the Gloucester exchange, paying the Gloucester base rate plus "local" mileage. In reply, the company expressed a willingness to adopt this plan if a canvass should show that the Magnolia subscribers really favored it. Such a canvass has since been made by the inspectors of the Telephone and Telegraph Department of the Commission and the results indicate that by far the larger number, even of the subscribers who use the service throughout the year, prefer the retention of the separate Magnolia exchange.

The chief complaint of the Fiskdale subscribers seems to be that, if toll is to be charged in communicating with Southbridge, the rate which they pay is out of all proportion to the opportunities for service which are furnished. They also complain because no individual or two-party lines are provided and only six-party residence service can be obtained. The chief complaint in the Magnolia exchange, as above indicated, is that certain subscribers are obliged to pay "foreign" mileage in order to secure service in the exchange to which they naturally belong by ties of community interest.

Taking these complaints up in order, it is true that the base rate of \$18 per year charged by the company for six-party service in these potential exchanges is the same rate which is charged for similar residential service in the larger exchanges of Group IV to Group VIII, inclusive, where much wider opportunities for telephone service are provided. On the other hand, the company claims, and submits statistics to prove, that this rate is no higher than is justified by the cost of service in the potential exchange. The reasonableness of the charge cannot

well be determined by the Commission until it is in a position to undertake an investigation of the company's schedule as a whole, for all the rates are interrelated and based upon conditions and theories which it is impossible properly to consider in any piecemeal way. For the present, therefore, the question thus raised must be deferred.

In view of this charge, however, which certainly is disproportionate to the character and amount of the service furnished, if not to its cost, we see no reason why the opportunity should be denied to secure service on individual or two-party lines at the ordinary schedule rates for such service corresponding to the \$18 six-party rate, in other words, at \$24 per year for an individual residential line and \$21 per year for a similar two-party line. The company claims that no demand exists for such service, but the evidence offered by the Fiskdale petitioners is to the contrary, and it appears that in the Magnolia potential exchange, which is classed with Group VIII exchanges, individual and two-party lines are provided. There seems to be no sufficient reason for lack of uniformity in this matter, and the opportunity to secure such service should be open. This is provided in the order entered below by requiring the company to include all the potential exchanges in the Group VIII class.

It remains to consider whether a subscriber located like the chief petitioner in the Magnolia case and desiring to be listed in the Gloucester exchange should be compelled to pay the heavy "foreign" mileage charge. This charge, if we correctly apprehend the theory underlying it, is not based upon any cost of service principle nor intended as a revenue producer. It is more in the nature of a protective barrier. Without entirely closing the door to listing in outside exchanges, it is intended to discourage this practice, to hold together the subscribers within any prescribed exchange area and to prevent the disorganizing of its service. If a subscriber in such a district connects himself with another exchange, thenceforth not only must he pay a toll charge when calling his neighbors, but they must pay a similar charge when calling him. The result, if any considerable number of subscribers should follow his example, would be a more or less serious demoralization of service within the local exchange area.

It is true that the potential exchanges are very small, and, as already stated, that their rates are high in comparison with the opportunities for service; nor is the local community interest

very clearly marked, for all of these exchanges are rather closely associated with some larger adjoining community. This is especially true in a case like Magnolia, where the local interest is created largely by the summer colony and where certain all-the-year-round residents, like the petitioner, have closer associations with the Gloucester or Manchester communities. Under such conditions, it seems somewhat of a hardship to compel a subscriber to become part of a local exchange in which he may have little interest and to pay toll in communicating with the center where his real interests lie. At the same time, it is seldom possible to establish any exchange area which will prove wholly satisfactory to every subscriber within its limits, and the controlling factor in the last analysis must be the will of the majority. Where the majority have clearly expressed their preference for a separate exchange, as they have in Magnolia, the elimination of the "foreign" mileage charge might, we fear, tend unduly to disorganize and restrict the service furnished.

In view of the special circumstances in these potential exchanges, however, the Commission is of the opinion that some reasonable concession which is not inconsistent with the rights of others ought fairly to be made in the case of a subscriber who wishes to be listed in some larger adjoining exchange and who is obliged to pay the "foreign" mileage charge to secure this service. Such a concession, which would in no way interfere with service in the potential exchange, may be given by allowing a subscriber, upon payment of this charge, to be listed in *both* the potential and the adjoining exchange and to be given service to and from other subscribers in each without payment of toll. An order requiring this change to be made in the present regulations and practices is entered below.

ORDER.

In the matter of the rates charged by the New England Telephone and Telegraph Company for service in so-called "potential" exchanges, it appearing that the Commission, after investigation, has on the date hereof made and filed a report containing its findings of fact and conclusions thereon, which said report is hereby referred to and made a part hereof, —

It is

Ordered, That the New England Telephone and Telegraph Company be hereby notified and required to establish within the districts served by the potential exchanges of Assonet, Fiskdale

and Windsor, within thirty days of the date hereof, upon not less than five days' notice to the Commission and the general public by plainly printing and filing, in the manner prescribed in section 20 of chapter 784 of the Acts of 1913, schedules amending its existing charges for telephone service within said districts by including said exchanges in the list of Group VIII exchanges.

It is

Further ordered, That the New England Telephone and Telegraph Company is hereby notified and required to establish, within thirty days of the date hereof, upon not less than five days' notice to the Commission and the general public, by plainly printing and filing, in the manner prescribed in section 20 of chapter 784 of the Acts of 1913, a schedule or schedules amending its existing rates, regulations and practices, so that a subscriber located within the district served by the potential exchanges of Assonet, Fiskdale, Magnolia or Windsor and desiring to be listed and secure service in an adjoining exchange may, upon the payment of the rate for such service prevailing in such adjoining exchange and the so-called "foreign" mileage charge, be listed not only in said adjoining exchange but also in the potential exchange serving the district in which said subscriber is located, and be given service to and from other subscribers in both exchanges without payment of toll.

It is

Further ordered, That a copy of this order be filed with said schedules at the office of the Commission and that a copy hereof be forthwith served upon the New England Telephone and Telegraph Company.

By the Commission,

ANDREW A. HIGHLANDS,

JULY 13, 1917. [P. S. C. 1201]

Secretary.

BRIDGES — RAILROAD AND RAILWAY.

Motion of the City Council of Boston to reopen for further hearing the matter of the petition of the City Council of Boston and the West End Street Railway Company for the alteration of the bridge by which Brookline avenue passes over the Boston and Albany railroad in the city of Boston, and to amend the order heretofore entered therein.

On April 12, 1916, a petition was filed with the Commission by the City Council of Boston and the West End Street Railway Company, praying that certain alterations might be ordered in the Brookline avenue bridge over the tracks of the Boston and Albany railroad in the city of Boston. In this matter the Commission, after notice and hearing, certified its decision to the parties interested in an order dated July 11, 1916. The City Council of Boston having presented a motion to reopen the above case for further hearing for the purpose of having the said order amended so as to provide a more convenient and satisfactory method of locating the water pipes,

And it appearing, after notice to and hearing all parties interested, and all parties having stated that they had no objection thereto, that the proposed changes are proper to be made and allowed, it is hereby ordered that the case be reopened, and that the order heretofore entered thereon be amended as of the date of July 11, 1916, so as to read as follows: —

THE COMMONWEALTH OF MASSACHUSETTS.

PUBLIC SERVICE COMMISSION.

[P. S. C. 1319]

JULY 11, 1916.

Petition of the City Council of Boston and the West End Street Railway Company (by the Boston Elevated Railway Company, its attorney) under section 23 of part I of chapter 463 of the Acts of 1906 and acts in amendment thereof, relative to the alteration of the bridge by which Brookline avenue passes over the Boston and Albany railroad in the city of Boston.

It appearing, after public notice to and hearing all parties interested, that Brookline avenue in the city of Boston is a public way which crosses the tracks of the Boston and Albany railroad by an overhead bridge, and that it is necessary for the security

and convenience of the public that an alteration be made in said bridge which does not involve the abolition of a crossing at grade, for the purpose of rebuilding the bridge and making certain structural changes for the purpose of strengthening and improving it, —

It is

Ordered, That the said bridge passing over the tracks of the Boston and Albany railroad at Brookline avenue in the city of Boston be altered and rebuilt in the manner and within the limits hereinafter described:—

1. The present superstructure, consisting of three pony trusses resting on masonry abutments and supporting the floor system or roadway and sidewalks, shall be entirely removed.

2. The present abutments shall remain unchanged except so far as is necessary to adapt them to the new superstructure to be constructed thereon.

3. Upon the present abutments there shall be constructed a through span, steel plate girder bridge, consisting of two main girders supporting floor system of roadway and sidewalks.

4. The pipes and conduits upon the present structure shall be removed and placed as follows: A single line of forty-two (42) inch water pipe shall be substituted for the two existing lines of twenty-eight (28) inch water pipe and placed beneath the railroad tracks. The location of the twelve (12) inch water pipe shall be abandoned. Provision shall be made for placing the other pipes and conduits now on the bridge below the surface of the sidewalks, provided that the head room below specified is not diminished.

5. The present clear height of fifteen (15) feet from the top of the rails of the railroad to the under side of the bridge shall not be diminished.

6. The clear roadway between the curb lines of the bridge shall be changed to forty (40) feet.

7. Provision shall be made to allow the placing of two car tracks upon the bridge.

8. The surface of the bridge shall be constructed of wood block pavement or granite block pavement.

9. There shall be two concrete sidewalks, each with a clear width of not less than seven (7) feet.

10. The grade of the roadway and of the sidewalks shall remain substantially unchanged.

11. The work is to be executed substantially in accordance with a plan marked "Brookline avenue bridge," dated March

28, 1917, and signed by E. F. Murphy, Commissioner of Public Works, which plan is signed by, and filed with the records of, this Commission and is made a part of this decision. The bridge shall be designed in accordance with the specifications of the Public Service Commission for bridges carrying street railways.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

APRIL 25, 1917. [P. S. C. 1319]

Commissioners.

Petition of the City Council of the city of Boston relative to an alteration of Bennington street bridge in the city of Boston.

It appearing, after public notice and hearing all parties interested, that Bennington street, in that part of the city of Boston known as East Boston, is a public way which crosses the tracks of the Boston and Albany Railroad Company by an overhead bridge, and that it is necessary for the security or convenience of the public that an alteration be made in said bridge, which does not involve the abolition of a crossing at grade, for the purpose of strengthening and improving it —

It is therefore

Ordered, That the said bridge passing over said tracks at Bennington street in the city of Boston be altered and rebuilt in the manner and within the limits hereinafter described:—

1. The present structure, consisting of a series of I-beam stringers with concrete arches between, shall be strengthened by removing the concrete from eight of the spaces between the present stringers and inserting in each said space an additional I-beam stringer and filling the space between the new stringers and the old stringers with concrete, as shown on plan No. 36058, on file with the Commission.

2. The four I-beam stringers adjacent to the sections of the bridge containing pipe conduits in the center of the bridge shall be strengthened by placing additional cover plates on the top and bottom of said stringers, as shown on said plan No. 36058.

3. The surface of the street shall be replaced with the same type of construction as that now existing, except that where street railway tracks are laid, the space outside and adjacent

to the rails of each track shall be constructed with a shoulder of granite block paving.

4. The space between the I-beam stringers in which the West End Street Railway Company has been granted authority to place wire conduits shall have the concrete removed and when the conduits have been laid, the space shall be filled with concrete with reinforcing rods, so that the under surface of the concrete in this space shall be flat, instead of the present arch; substantially as shown on plan No. B-6236-A, filed with the records of this Commission and made a part of this decree.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

APRIL 25, 1917. [P. S. C. 1726]

Commissioners.

Motion of the City Council of Boston to amend decree of the Commission relative to the alteration of the Bennington street bridge in the city of Boston.

After consideration, the West End Street Railway Company, by the Boston Elevated Railway Company, its attorney, and the Boston and Albany Railroad Company having joined in the above motion, —

It is

Ordered, That the decree of the Commission dated April 25, 1917, prescribing the manner and limits in which certain alterations shall be made in the bridge passing over the tracks of the Boston and Albany Railroad Company at Bennington street in the city of Boston, be hereby amended in the paragraph of said decree numbered three, by inserting after the word "laid," in the third line thereof, the words, — "the space between the rails of each track shall be paved with granite block paving and," so as to read as follows: —

The surface of the street shall be replaced with the same type of construction as that now existing, except that where street railway tracks are laid the space between the rails of each track shall be paved with granite block paving and the space outside and adjacent to the rails of each track shall be constructed with a shoulder of granite block paving.

Attest: ANDREW A. HIGHLANDS,

JULY 17, 1917. [P. S. C. 1726]

Secretary.

Petition of City Council of the city of Boston relative to the alteration of bridge over the tracks of the New York, New Haven and Hartford railroad at Walworth street in the West Roxbury district of Boston.

It appearing, after notice and hearing of all parties interested, that Walworth street in the city of Boston is a public way which crosses the tracks of the New York, New Haven and Hartford railroad by an overhead bridge, and it is necessary for the security and convenience of the public that an alteration be made in said bridge, which does not involve the abolition of a crossing at grade, for the purpose of widening by the building of a sidewalk on either side for the use of pedestrians over the bridge, — it is therefore

Certified, That an alteration of such bridge is necessary and the manner and limits of such alteration are hereby prescribed as follows: —

1. The present abutments are to remain unchanged except so far as is necessary to adapt them to the new sidewalks to be constructed thereon.

2. On either side of the present superstructure, two 5-ft. sidewalks are to be built, with suitable fences for the protection of the public, substantially as shown on plan marked "Walworth Street Bridge, September 1, 1917, E. F. Murphy, Commissioner of Public Works", which is filed with the records of this Commission and is made a part of this decision.

Attest: ANDREW A. HIGHLANDS,
DECEMBER 15, 1917. [P. S. C. 1918] Secretary.

Petitions of the municipal council of the city of Taunton and of the selectmen of Dighton, relative to the repair, reconstruction or replacement of bridge carrying the tracks of the Bay State Street Railway Company over Three Mile river between Taunton and Dighton.

This is a petition of the city of Taunton and the town of Dighton setting forth that the bridge over the Three Mile river, which is the boundary line between the city of Taunton and the town of Dighton, and upon which bridge are located tracks of the Bay State Street railway, is in need of repairs or reconstruction, and asks the Commission to determine what work is

necessary to be done. Since the filing of the petition, the city of Taunton and the town of Dighton have constructed a new bridge in place of the old wooden bridge, and this action of the parties interested makes unnecessary any finding of the Commission in the matter.

It is therefore

Ordered, That the petition be dismissed.

By the Commission,

ANDREW A. HIGHLANDS,

DECEMBER 17, 1917. [P. S. C. 1790]

Secretary.

Petition of the City of Worcester for approval of plan for temporary approach and temporary trestle at Lake Quinsigamond bridge.

After examination and report by Professor Lewis E. Moore, bridge and signal engineer of the Commission, and further consideration, —

It is

Ordered, That, in accordance with the provisions of chapter 302 of the General Acts of 1915, plan for a temporary highway bridge for the use of vehicles and pedestrians and of the Worcester Consolidated street railway during the construction, as provided in said Act, of the new bridge over a part of or across Lake Quinsigamond, between Worcester and Shrewsbury, be hereby approved, so far as street railway traffic is concerned, a copy of said plan being on file in this office.

Attest:

ANDREW A. HIGHLANDS,

MARCH 15, 1917. [P. S. C. 1287]

Secretary.

SPEED OF CARS ON DRAWBRIDGES.

Petition of the City Council of the city of Boston for approval of regulation governing the speed of street railway cars approaching drawbridges in said city.

This petition was brought under section 74, part III, chapter 463 of the Acts of 1906, which permits the board of aldermen of a city or the selectmen of a town to establish regulations as to the speed of cars upon street railway tracks in such cities or towns, subject to approval, revision and alteration by the Com-

mission. The ordinance passed by the City Council of Boston and approved by the mayor on July 10, 1917, reads as follows: —

The commissioner of public works shall place and maintain a sign or signs displaying the words — Warning! Drawbridge — at such points on public streets as he may determine two hundred feet away from the gates on each side of all drawbridges crossed by street cars. No street cars shall proceed from said sign or signs to the place where the gate of the drawbridge is located at a speed exceeding six miles per hour.

As the result of the serious accident last November, when a car of the Boston Elevated Railway Company plunged through an open draw at the Fort Point Channel bridge, and after a thorough investigation, the Commission, on December 21, 1916, issued an order to all street railway companies operating over drawbridges in this commonwealth which contained the following provision: —

Ordered, That every street railway company in the Commonwealth operating cars or trains over drawbridges on surface lines shall at once establish positive stops at a reasonable braking distance from each drawbridge, subject to the approval of the Commission, to protect traffic going in either direction, and shall erect at each stopping place a stop sign visible both by day and by night, the type of sign and rules governing its use to be approved by the Commission.

Immediately after the issuance of this order, the inspection department of the Commission made an examination of the drawbridges in question and recommended 100 feet as a reasonable braking distance at which all cars should be brought to a full stop. A stop signal was submitted by the companies and approved January 19, 1917, and such signals have been erected at approximately 100 feet from either end of the draw spans. These signs are three feet long and one foot high and have the following inscription in large letters:

DRAWBRIDGE
STOP

They are illuminated at night and can be plainly read at a distance of 200 feet.

The following operating rules were also recommended by the Commission and have been adopted by the companies: —

STOP SIGNS. (a) Safety stops have been installed approximately 100 feet from drawbridge openings and are designated by a sign requiring cars to come to a full stop before proceeding.

(b) Where such stops have been established, bring car to a full stop and only proceed upon receiving two bells from the conductor after the conductor and motorman have found the draw to be closed and the way clear.

In addition to the above, the Boston Elevated Railway Company has the following rule: —

Speed of cars must not exceed five miles per hour in entering upon and passing over a drawbridge.

The rule of the Bay State Street Railway Company is as follows: —

At all drawbridges, cars must be brought to a full stop at least one hundred feet from the draw, and not proceed except by usual bell signal from the Conductor who shall have ascertained for a certainty that the draw is closed and safe to cross. All drawbridges for their entire length must be crossed at a moderate rate or such speed as may be fixed by local ordinance or posted thereon.

The ordinance proposed by the City Council, unlike the order issued by the Commission, does not provide that cars shall make a positive stop before proceeding over drawbridges. The rule adopted by the Commission makes it possible to place responsibility upon the conductor, as well as the motorman, to know that the draw is closed and the way is clear, just as steam railroads require both engineer and fireman to observe signals at important points. Furthermore, the rule is simple and no difference of opinion as to its meaning is possible, whereas a requirement that a certain rate of speed per hour be maintained is susceptible in practice of different interpretations by different individuals. If the positive stop is made at the distance specified by the Commission, the speed of the car cannot be very great upon reaching the draw, and this matter is further controlled by the operating rules of the companies. The distance of 100 feet from the draw is the same distance as is specified by the statute which requires street railway cars to come to a full stop before proceeding over a steam railroad crossing at grade, and this has been the law and practice in this commonwealth for many years. If a stop is made at this distance, it would be necessary for a motorman to have his car under control at the location of the Council's proposed caution signal. Little, if anything, would therefore be gained by the installation of this additional sign.

At the hearing, it appeared that the city government had not been fully informed as to the measures taken by the Commission to safeguard operation at drawbridges. The city's representative

was, therefore, furnished with copies of the orders of the Commission relating to the matter and the hearing was suspended upon the understanding that it might be re-opened if the City Council should feel, after consideration, that such action was desirable. Later, the Commission received a communication stating that no further hearing was desired. Under the circumstances, the Commission believes that the proposed regulation does not add to the requirements already imposed but might, instead, tend to confuse the situation. In the judgment of the Commission, sufficient justification has not been shown for the approval of the ordinance.

In this connection, it seems desirable to call attention to a further recommendation made by the Commission at the time when the order above mentioned was issued. Many of the existing gates at drawbridges are less than 50 feet from the draw, the distance varying from 1 foot 10 inches to 63 feet 8 inches. In its order, the street railway companies were directed by the Commission to take the matter up with the various city and town officials and endeavor to reach agreements whereby the gates might be located in all cases not less than 50 feet from the end of the draw span and be so interlocked with the operating mechanism of the draw that it would be impossible to open the draw before the gates were closed. Such an arrangement, in addition to the other safeguards now in force, would, in the opinion of the Commission, materially enhance public safety at these bridges. It is to be hoped that the municipal authorities may be able to co-operate with the companies in the carrying out of this recommendation.

It is therefore

Ordered, That the petition be dismissed.

For the Commission,

ANDREW A. HIGHLANDS,

SEPTEMBER 21, 1917. [P. S. C. 1834]

Secretary.

“STOP” SIGNS AT DRAWBRIDGES.

Petition of the Bay State Street Railway Company for approval of location and type of “Stop” signs at drawbridges on the line of its railway, and rule governing their use.

It appearing that the Bay State Street Railway Company proposes to install “Stop” signs at drawbridges over which its cars are operated, in accordance with an order of the Commis-

sion dated November 21, 1916, as described in an amended petition filed June 9, 1917, together with plans showing the proposed location thereof, —

It is

Ordered, That the approval of the Commission be hereby given to the location and type of "Stop" signs and rule governing their use; said signs to be installed at drawbridges over which the cars of the Bay State Street Railway Company are operated, as follows: —

1. South Draw, Chelsea bridge, over Mystic river, Boston.
2. North Draw, Chelsea bridge, over Mystic river, Boston.
3. Fox Hill bridge, over Saugus river, Saugus and Lynn.
4. Essex bridge, over Beverly harbor, Salem and Beverly.
5. Bridge over Bass river, Beverly.
6. Cut bridge, over Gloucester canal, Gloucester.
7. Bridge over Merrimack river, Haverhill (Bradford).
8. Bridge over Merrimack river, Haverhill and Groveland.
9. Neponset bridge, over Neponset river, Boston and Quincy.
10. Fore River bridge, over Weymouth Fore river, Quincy and Weymouth.
11. Back River bridge, over Weymouth Back river, Weymouth and Hingham.
12. Quincy Avenue bridge, over Monatiquot or Fore river, Braintree.
13. Slade's Ferry bridge, over Taunton river, Fall River and Somerset.

All as shown on plans entitled "Bay State St. Ry. Co. Plans accompanying petition to the Public Service Commission for location of drawbridge 'Stop' signs," dated December, 1916, on file with the petition. The type of sign hereby approved is 36 by 13 inches in size, bearing the words "DRAWBRIDGE — STOP" painted in black letters on white background, to be illuminated at night. The rule governing the use of such signs is as follows: —

RULE 39. — DRAWBRIDGES.

"Stop" signs: (a) Safety stops have been installed approximately 100 feet from drawbridge openings, and are designated by a sign requiring cars to come to a full stop before proceeding.

(b) Where said stops have been established, bring car to a full stop and only proceed upon receiving two bells from the conductor after the conductor and motorman have found the draw to be closed and the way clear.

(c) All drawbridges for their entire length must be crossed at a moderate rate or such speed as may be fixed by local ordinance or posted thereon.

Attest: ANDREW A. HIGHLANDS,

JUNE 11, 1917. [P. S. C. 1661]

Secretary.

Petition of the Boston Elevated Railway Company for approval of location of stop signs at drawbridges on the line of its railway.

It appearing that the Boston Elevated Railway Company proposes to install stop signs at drawbridges over which its cars are operated, in accordance with an order of the Commission dated November 21, 1916, and has submitted plans showing the proposed location thereof, —

It is

Ordered, That the approval of the Commission be hereby given to the location of stop signs to be installed at drawbridges over which cars of the Boston Elevated Railway Company are operated, as follows: —

1. Alford street bridge, over Mystic river.
2. Arsenal street bridge, over Charles river.
3. Broadway Extension bridge, over Fort Point channel.
4. Charles river dam.
5. Charlestown bridge, over Charles river.
6. Chelsea street bridge, over Chelsea river.
7. Dorchester avenue bridge, over Fort Point channel.
8. Dover street bridge, over Fort Point channel.
9. Harvard bridge, over Charles river.
10. L street bridge, over reserved channel.
11. Meridian street bridge, over Chelsea river.
12. River street bridge, over Charles river.
13. Summer street bridge, over Fort Point channel.
14. Warren bridge, over Charles river.
15. Wellington bridge, over Mystic river.
16. Western avenue bridge, over Charles river.

All as shown on plans entitled "Boston Elevated Railway Co. Plans showing proposed location of stop signs on Draw Bridges" dated December 20, 1916, revised February 10, 1917, on file with the petition.

Attest: ANDREW A. HIGHLANDS,
FEBRUARY 27, 1917. [P. S. C. 1695] Secretary.

Petition of the Boston Elevated Railway Company for modification of order approving location of stop signs at drawbridges on the line of its railway.

After consideration, it appearing that a change in the location of poles necessary in order to comply with the provisions

of an order of this Commission issued under date of February 27, 1917, so far as said order applies to the location of stop signs at the drawbridge at the Charles River dam, over which the cars of the Boston Elevated railway are operated, is undesirable, for reasons stated in the petition, and that the petitioner has submitted a plan showing a change in the proposed location of said stop signs, —

It is

Ordered, That the order of this Commission dated February 27, 1917, be hereby modified; and that approval be hereby given to the location of stop signs to be installed at the drawbridge of the Charles River dam, in the cities of Boston and Cambridge, over which cars of the Boston Elevated railway are operated, as shown on a plan entitled "West End Street Railway Co., Stop Signs on Charles River Dam, Boston and Cambridge," dated May 23, 1917, on file with the petition.

Attest: ANDREW A. HIGHLANDS,

MAY 31, 1917. [P. S. C. 1695]

Secretary.

Petition of the Massachusetts Northeastern Street Railway Company for approval of type of "stop" signs and method of operating its cars over certain drawbridges in Newburyport, Salisbury, Amesbury and Newbury.

It appearing that the Massachusetts Northeastern Street Railway Company proposes to install "stop" signs at drawbridges over which its cars are operated, in accordance with an order of the Commission dated November 21, 1916, as described in an amended petition filed July 13, 1917, —

It is

Ordered, That the approval of the Commission be hereby given to the location and type of "stop" signs and rules governing their use; said signs to be installed at drawbridges over which the cars of the Massachusetts Northeastern Street Railway Company are operated, as follows: —

1. Newburyport-Salisbury bridge, over Merrimack river.
2. Deer Island bridge, over Merrimack river.
3. Powow bridge, over Powow river.
4. Plum Island bridge, over Plum Island river.

The type of sign hereby approved is 36 inches by 13 inches in size, bearing the words "DRAWBRIDGE — STOP" painted

in black letters on white background, to be illuminated at night. The rule governing the use of such signs shall be as follows: —

Stop Signs. (a) Safety stops have been installed approximately 100 feet from drawbridge openings and are designated by a sign requiring cars to come to a full stop before proceeding.

(b) Where such stops have been established bring car to a full stop and only proceed upon receiving two bells from the conductor after the conductor and motorman have found the draw to be closed and way clear.

Attest: ANDREW A. HIGHLANDS,
JULY 25, 1917. [P. S. C. 1681] Secretary.

Petition of the New Bedford and Onset Street Railway Company for approval of type of "stop" signs and method of operating its cars at the Canal drawbridge in Bourne.

It appearing that the New Bedford and Onset Street Railway Company proposes to install "stop" signs at the drawbridge over the Cape Cod canal in the town of Bourne over which its cars are operated, in accordance with an order of the Commission dated November 21, 1916, as described in an amended petition filed June 12, 1917, and shown upon a plan filed with the petition, —

It is

Ordered, That the approval of the Commission be hereby given to the location and type of "stop" signs and rules governing their use, as installed at the drawbridge over the Cape Cod canal in the town of Bourne, and shown upon a plan entitled "Plan of Bridge over Cape Cod Canal in the Town of Bourne," dated June 5, 1917, on file with the petition. The type of sign hereby approved is thirty-six (36) inches long and eighteen (18) inches wide, illuminated by five (5) 23-watt lamps, bearing the words "DRAWBRIDGE — STOP." The rule governing the use of this sign is as follows: —

GENERAL ORDER No. 607.

Subject: Safety Stop at Canal Drawbridge, Bourne.

Safety *Stop Signs* have been installed approximately 110 feet on the south side, and approximately 73 feet on the north side, from the drawbridge openings, and are designated by a sign requiring cars to come to a full stop before proceeding.

Motormen operating cars on the Canal bridge at Bourne when approaching the draw span will bring car to a full stop and only proceed upon receiving two bells from the conductor after the conductor and motorman have found the draw to be closed and the way clear.

General order No. 605 is hereby annulled.

Attest: ANDREW A. HIGHLANDS,

JULY 24, 1917. [P. S. C. 1647]

Secretary.

Petition of the Union Street Railway Company for approval of stop sign and method of operating cars over the draw span of the New Bedford and Fairhaven bridge in New Bedford.

After consideration, —

It is

Ordered, That the approval of the Commission, in accordance with an order dated November 1, 1916, be hereby given to the installation of safety stop signs approximately one hundred (100) feet from the drawbridge openings at the draw span of the New Bedford and Fairhaven bridge in New Bedford, and to the rules governing the operation of cars over said draw span, stated in the petition, the location of said signs being shown on a plan on file with the petition.

Attest: ANDREW A. HIGHLANDS,

MAY 1, 1917. [P. S. C. 1748]

Secretary.

CAPITAL STOCK AND BONDS.

Petition of the Bay State Street Railway Company for approval of issues of bonds of the Boston and Northern Street Railway Company and of the Old Colony Street Railway Company, respectively, and for approval of an issue of additional first preferred stock.

This is a petition from the Bay State Street Railway Company that the Commission determine the amount of first mortgage bonds of the Boston and Northern Street Railway Company and of the Old Colony Street Railway Company, respectively, and the amount of first preferred capital stock which will be properly required and which it will approve as reasonably necessary for providing means for the payment of floating indebtedness to the amount of four hundred twelve thousand dollars (\$412,000) representing discount on bonds issued for purposes approved in orders of the Board of Railroad Commissioners and of this Commission; floating indebtedness to the amount of five hundred thirty-nine thousand, seven hundred sixty-five dollars and forty-eight cents (\$539,765.48) for additions and betterments, and such further amount on account of betterments in connection with reconstruction of the property of the company as the Commission shall determine.

The petition was filed February 20, 1917, and hearings thereon were given, after advertised notice, on February 21, 1917, and April 24, 1917. The purposes for which the company's indebtedness was incurred included payments for track and line construction, car equipment, power house machinery, underground conduits and feed wires, bridges, land and buildings, separation of grade crossings and various other items, all being shown on a schedule filed with the petition. An investigation of this schedule by the accounting and engineering departments of the Commission has been entered upon, but has not been entirely completed. Pending the final accounting, it is deemed important at this time that the company be allowed to issue a certain amount of stock and bonds in order to fund some of its outstanding floating indebtedness.

From the investigation which has already been made, the Commission is satisfied that the expenditures on account of construction or the purchase of additional physical property, which may properly be capitalized, amount, after deducting the cost of property sold, destroyed or retired since the date of the last authorization of stock or bonds, to not less than three hundred seventy-five thousand dollars (\$375,000), and that the expenditures for betterments in connection with reconstruction of the property of the company which may properly be capitalized amount to not less than four hundred twenty-five thousand dollars (\$425,000), making a total of eight hundred thousand dollars (\$800,000).

In view of these facts, the Commission is satisfied that the company may properly be allowed to issue at this time securities aggregating eight hundred thousand dollars (\$800,000) par value, on account of these expenditures, and that there may also be authorized at this time securities amounting to four hundred twelve thousand dollars (\$412,000) par value, to pay floating indebtedness representing discounts on previous issues of bonds, making a total of one million, two hundred twelve thousand dollars (\$1,212,000) which may be authorized: The question of what further securities may properly be authorized under the pending petition is left for future determination. The Commission, after careful consideration, has also determined that the securities now authorized should be issued as follows:—

Bonds to be issued on account of discounts:—

Boston and Northern Street Railway Company,	\$170,000	
Old Colony Street Railway Company,	242,000	
	<hr/>	\$412,000

Bonds to be issued on account of additions and betterments:—

Boston and Northern Street Railway Company,	\$155,000	
Old Colony Street Railway Company,	156,000	
	<hr/>	311,000

Total bonds issued,	\$723,000
---------------------	-----------

First preferred stock of the Bay State Street Railway Company to be issued on account of additions and betterments,	489,000
---	---------

Total securities to be issued,	\$1,212,000
--------------------------------	-------------

It is, therefore,

Ordered, That the approval of the Commission be hereby given to the issue of additional preferred stock by the Bay State

Street Railway Company at the price of one hundred dollars (\$100) per share, as fixed by its stockholders, of not exceeding four thousand eight hundred ninety (4,890) additional shares of six per cent (6%) cumulative first preferred capital stock amounting at par value to four hundred eighty-nine thousand dollars (\$489,000), having the preferences, voting powers, restrictions and qualifications fixed in the articles of agreement dated May 26, 1911, for the purchase of the franchise and property of the Old Colony Street Railway Company by the Boston and Northern Street Railway Company (now the Bay State Street Railway Company) and approved by the Board of Railroad Commissioners in an order dated June 28, 1911, as an issue of stock of an amount reasonably necessary for the purpose of paying certain floating indebtedness properly incurred in the construction and equipment of the railway and in the purchase of property necessary for its operation, as shown in the schedule on file with the petition.

It is

Further ordered, That the approval of the Commission, under the authority of chapter 323 of the Acts of 1911 be hereby given to the issue by the Bay State Street Railway Company (formerly the Boston and Northern Street Railway Company) of coupon or registered bonds of the Boston and Northern Street Railway Company, secured by the mortgage executed by said company to the Adams Trust Company (now the American Trust Company) under date of July 1, 1904, to an amount not exceeding at par value one hundred seventy thousand dollars (\$170,000) payable in fifty years from the date thereof and bearing interest at the rate of four per cent (4%) per annum, as an issue of bonds reasonably necessary and of the amount required for the purpose of paying certain floating indebtedness representing discounts on previous issues of bonds, and the Bay State Street Railway Company is hereby required, except as this requirement may hereafter be modified by the Commission, to establish a sinking fund, with the American Trust Company of Boston as trustee and custodian of such fund, and to pay into said fund, by equal semi-annual payments on June 30 and December 31 the sum of two thousand five hundred dollars (\$2,500) in each year until the maturity of said bonds, and to make the first of such semi-annual payments on June 30 next.

It is

Further ordered, That the approval of the Commission, under the authority of chapter 323 of the Acts of 1911, be hereby given

to the issue by the Bay State Street Railway Company (formerly the Boston and Northern Street Railway Company) of coupon or registered bonds of the Boston and Northern Street Railway Company secured by the mortgage executed by said company to the Adams Trust Company (now the American Trust Company) under date of July 1, 1904, to an amount not exceeding at par value one hundred fifty-five thousand dollars (\$155,000), payable in fifty years from the date thereof and bearing interest at the rate of four per cent (4%) per annum, as an issue of bonds reasonably necessary and of the amount required for the purpose of paying certain floating indebtedness properly incurred in the construction and equipment of the railway and in the purchase of property necessary for its operation, all as described in the schedule on file with the petition.

It is

Further ordered, That the approval of the Commission, under the authority of chapter 323 of the Acts of 1911, be hereby given to the issue by the Bay State Street Railway Company (successor to the Old Colony Street Railway Company) of coupon or registered bonds of the Old Colony Street Railway Company, secured by the mortgage executed by said company to the Old Colony Trust Company under date of July 1, 1904, to an amount not exceeding at par value two hundred forty-two thousand dollars (\$242,000), payable in fifty years from the date thereof and bearing interest at the rate of four per cent (4%) per annum, as an issue of bonds reasonably necessary and of the amount required for the purposes described or referred to in the petition; and the Bay State Street Railway Company is hereby required, except as this requirement may hereafter be modified by the Commission, to establish a sinking fund, with the Old Colony Trust Company of Boston as trustee and custodian of said fund, and to pay into such fund by equal semi-annual payments on June 30 and December 31 the sum of three thousand five hundred dollars (\$3,500) in each year, until the maturity of said bonds, and to make the first of such semi-annual payments on June 30 next.

And it is

Further ordered, That the approval of the Commission, under the authority of chapter 323 of the Acts of 1911, be hereby given to the issue by the Bay State Street Railway Company (successor to the Old Colony Street Railway Company) of coupon or registered bonds of the Old Colony Street Railway Company, secured by the mortgage executed by said company to the Old Colony Trust Company under date of July 1, 1904, to an amount

not exceeding at par value one hundred fifty-six thousand dollars (\$156,000), payable in fifty years from the date thereof, and bearing interest at the rate of four per cent (4%) per annum, as an issue of bonds reasonably necessary and of the amount required for the purpose of paying certain floating indebtedness properly incurred in the construction and equipment of the railway and in the purchase of property necessary for its operation, as shown in the schedule on file with the petition.

These orders of approval are granted upon the understanding that the first preferred stock herein authorized shall be issued before any of the bonds herein authorized are issued.

By the Commission,

ANDREW A. HIGHLANDS,

APRIL 25, 1917. [P. S. C. 1689]

Secretary.

Petition of the Bay State Street Railway Company for approval of issues of bonds of the Boston and Northern Street Railway Company and of the Old Colony Street Railway Company, respectively, and for approval of an issue of additional first preferred stock.

This petition has been described in a report and order issued thereon and dated April 25, 1917. In that order the Commission approved the issue by the Bay State Street Railway Company of bonds of the Boston and Northern Street Railway Company having a par value of \$325,000, and bonds of the Old Colony Street Railway Company having a par value of \$398,000, and of shares of its own first preferred stock having a par value of \$489,000, the total par value of the securities thus approved being \$1,212,000. It was stated that the Commission was satisfied, upon the evidence then available, that bonds and stock of the amount specified might properly be approved, and the question of what further securities, if any, might lawfully be issued under the same petition was left for future determination.

The petition asks for the approval of the issue of bonds and stock of an aggregate par value of \$1,634,000, to provide means for the payment of floating indebtedness representing, in part, discount on bonds previously issued under the approval of this Commission or of its predecessor, the Board of Railroad Commissioners, and, in part, expenditures for various additions and

betterments to the property of the company, shown in detail on the schedule filed with the petition. The investigation by the engineering and accounting departments of the Commission of this schedule of expenditures has now been completed. The property referred to therein has been inspected, all deeds covering land purchased have been examined and the details and unit prices of the various construction jobs have been carefully analyzed and checked. In all cases where property has been renewed or retired its original cost has been deducted. As a result of this investigation, the departments report that an indebtedness aggregating \$1,447,131.02 has been incurred for lawful purposes, and may properly be paid with the proceeds from the issue of bonds or stock. After deducting the securities already approved under the order dated April 25, 1917, this leaves a balance of \$235,131.02 subject to capitalization. Having in mind, therefore, the balance which it is necessary under the law to preserve between the stock and bond issues of the company, the following additional securities may be approved:—

First preferred stock,	\$117,100
Boston and Northern bonds,	91,000
Old Colony bonds,	27,000
<hr/>	
Total,	\$235,100

It is, therefore,

Ordered, That the approval of the Commission be hereby given to the issue of additional preferred stock by the Bay State Street Railway Company at the price of one hundred dollars (\$100) per share as fixed by its stockholders, of not exceeding one thousand one hundred seventy-one (1,171) additional shares of six per cent (6%) cumulative first preferred capital stock, amounting at par value to one hundred seventeen thousand one hundred dollars (\$117,100) having the preferences, voting powers, restrictions and qualifications fixed in the articles of agreement dated May 26, 1911, for the purchase of the franchise and property of the Old Colony Street Railway Company by the Boston and Northern Street Railway Company (now the Bay State Street Railway Company) and approved by the Board of Railroad Commissioners in an order dated June 28, 1911, as an issue of stock reasonably necessary for the purpose of paying certain floating indebtedness properly incurred in the construction and equipment of the railway and in the purchase of property necessary for its operation, as shown in the schedule on file with the petition.

It is

Further ordered, That the approval of the Commission, under the authority of chapter 323 of the Acts of 1911, be hereby given to the issue by the Bay State Street Railway Company (formerly the Boston and Northern Street Railway Company) of coupon or registered bonds of the Boston and Northern Street Railway Company secured by the mortgage executed by said company to the Adams Trust Company (now the American Trust Company), under date of July 1, 1904, to an amount not exceeding at par value ninety-one thousand dollars (\$91,000), payable in fifty (50) years from the date thereof and bearing interest at the rate of four per cent (4%) per annum, as an issue of bonds reasonably necessary and of the amount required for the purpose of paying certain floating indebtedness properly incurred in the construction and equipment of the railway and in the purchase of property necessary for its operation, all as described in the schedule on file with the petition.

And it is

Further ordered, That the approval of the Commission, under the authority of chapter 323 of the Acts of 1911, be hereby given to the issue by the Bay State Street Railway Company (successor to the Old Colony Street Railway Company) of coupon or registered bonds of the Old Colony Street Railway Company secured by the mortgage executed by the said company to the Old Colony Trust Company under date of July 1, 1904, to an amount not exceeding at par value twenty-seven thousand dollars (\$27,000), payable in fifty years from the date thereof and bearing interest at the rate of four per cent (4%) per annum, as an issue of bonds reasonably necessary and of the amount required for the purpose of paying certain floating indebtedness properly incurred in the construction and equipment of the railway and in the purchase of property necessary for its operation, as shown in the schedule on file with the petition.

These orders of approval are granted upon the understanding that before the bonds or any part thereof herein authorized are issued an equivalent amount of the first preferred stock herein authorized shall be issued.

Attest:

CHARLES E. MANN,

MAY 24, 1917.

[P. S. C. 1689]

Executive Secretary.

Petition of the Bay State Street Railway Company for approval of an issue of notes to the amount of \$1,308,000.

This is a petition of the Bay State Street Railway Company for approval of an issue of notes having a face value of \$1,308,000, to be dated August 1, 1917, to bear interest at the rate of six per cent per annum and severally to mature and be paid in series at the rate of \$131,000 each year for nine years and \$129,000 for the tenth year. These notes are to be used, in accordance with the provisions of chapter 671 of the Acts of 1914, "to provide means for, or to fund, the actual cost of replacement or reconstruction of" property, as set forth in a schedule attached to the petition.

By an order dated December 2, 1916, the Commission approved the issue by the petitioner of similar notes to the amount of \$2,500,000, the proceeds of which were to be used for a similar purpose. The petitioner has been unable to negotiate these notes, and now waives the provisions of the aforesaid order, so that it may be cancelled by the Commission and the notes covered by the pending petition may be issued. At the present time the company, it seems, has under contract 200 new passenger cars, the total cost of which will be approximately \$1,631,000. To finance this cost the following arrangement is proposed: All the contracts for the construction and equipment of the cars will be assigned to an individual. This individual, styled the vendor, will thereupon sell the cars to the Bay State Street Railway Company under a conditional sale agreement, receiving in return cash to the amount of \$323,000 and notes of the face value of \$1,308,000, — making up the total of \$1,631,000, — and also further cash representing the difference, if any, between the face value of the notes and the value at which they are taken by the vendor, this latter being the price at which he is able to market them. The proceeds of the notes and the cash paid directly by the company will be assigned by the vendor to a trustee, together with all the contracts for the construction and equipment of the cars. As the latter are received they will be paid for by the trustee and will be turned over to the Bay State Street Railway Company for its use. The title to the cars, however, will not vest in the company until all the notes are paid, but in the meantime will be held by the trustee as security for the note holders.

A conditional sale of rolling stock such as is contemplated is

specifically authorized by section 59 of Part I of chapter 463 of the Acts of 1906, which reads as follows: —

A contract for the sale of railroad or street railway rolling stock may stipulate that the title to the property sold or contracted to be sold shall not vest in the purchaser until the purchase price is fully paid, or that the vendor shall have and retain a lien thereon for the unpaid purchase money although possession thereof may be delivered immediately or at any subsequent time, and a contract for the leasing or hiring of such property may stipulate for a conditional sale thereof at the termination of such contract, and that the rentals or amounts to be received thereunder, may, as paid, be applied and treated as purchase money, and that the title to the property shall not vest in the lessee or bailee until the purchase price shall have been paid in full and until the terms of the contract shall have been fully performed, notwithstanding delivery to and possession by such lessee or bailee. No such contract shall be valid as against any subsequent attaching creditor or any subsequent bona fide purchaser for value and without notice unless it is in writing, executed by the parties and acknowledged by the vendee, lessee or bailee before a magistrate authorized to take acknowledgments of deeds, and in the same manner as deeds are acknowledged, and recorded in the office of the secretary of the commonwealth; nor unless each locomotive, engine or car so sold, leased or hired, or contracted to be sold, leased or hired as aforesaid, shall have the name of the vendor, lessor or bailor plainly marked on each side thereof, followed by the word "owner", "lessor", or "bailor", as the case may be. The provisions of chapter one hundred and ninety-eight of the Revised Laws shall not apply to such contract.

It will be noted that no approval by the Commission is required in the case of such a sale, so that the responsibility rests directly upon the company. While such a method of acquiring railroad and railway equipment cannot be regarded as generally commendable, under certain conditions its adoption may be expedient.

The new cars will take the place on the books of the company of property which has been or is to be sold, destroyed or abandoned. This property, as listed in the schedule filed with the petition, consists of 338 passenger cars and 39 snow plows, including bodies, trucks and electric equipment, and, further, of property abandoned and replaced in connection with reconstruction work already completed.

Chapter 671 of the Acts of 1914 was discussed by the Commission in the above mentioned report and order, issued December 2, 1916, as follows: —

. . . The general law (St. 1906, c. 463, Pt. III, § 108) prohibits street railway companies from issuing bonds, coupon notes or other evidences

of indebtedness payable at periods of more than twelve months after the date thereof to an amount which, including the amount of all such securities previously issued and outstanding, exceeds in the whole the amount of its capital stock plus premiums paid in thereon. The 1914 statute amends this law by providing that the limitation shall not apply to —

bonds, coupon notes or other evidences of indebtedness payable at periods of more than twelve months after the date thereof, in addition to, and not exceeding twenty per cent of, the amount so computed, which shall be authorized as consistent with the public interest by the public service commission, and which shall be subject to such requirement as to a sinking fund or other method of retiring said evidences of indebtedness within a period not exceeding ten years, as the commission may prescribe, to provide means for, or to fund, the actual cost of replacement or reconstruction of any existing property. . . .

This statute is unique in the history of the regulation of public utility capitalization in this commonwealth, in that it permits evidences of indebtedness running for periods of more than twelve months to be issued, not for the purpose of meeting the cost of additions or improvements to the property, but for the purpose of paying for renewals which are ordinarily and properly regarded as a part of the expense of operation. Its general purpose, apparently, is to make it possible for street railway companies faced with the immediate need of unusually large expenditures for replacements or reconstruction, and having no adequate depreciation fund, to spread the burden over a series of not exceeding ten years without the use of short-time notes, instead of charging it at once to operating expense. The privilege in this way to fund such expenditures, however, may be exercised, under the statute, only at the discretion of the Commission when found to be "consistent with the public interest."

In the present instance there is no question but that the Bay State Street Railway Company has on its books property which ought to be replaced and written off and which is greater in book value than the face value of the notes desired. It is equally clear that the company is in need of new cars and that the public interest will be served by their acquisition. It further appears that the contemplated conditional sale is authorized by the statutes and is a method of acquisition to which, while not ordinarily desirable, the company considers it necessary under existing conditions to resort. If, as seems probable, the notes are taken by the vendor at a substantial discount, the interest charge upon the capital secured will be high. War conditions, however, have undoubtedly made the market for street railway securities very unfavorable, and the Commission is not prepared, upon the evidence available, to hold that this company can now make a more advantageous arrangement for the purchase of the cars. The contracts for and prices of the new cars have been

checked by the accountants of the Commission and found to agree with the representations made. Under the circumstances the Commission believes that it is consistent with the public interest that the company should be permitted to issue notes of the character and face value stated, and for the purpose desired. It will be the duty of the company to place the notes upon the best terms obtainable.

ORDER.

It appearing, after notice and hearing and further investigation, that the issue by the petitioner of notes of the face value of one million three hundred eight thousand dollars (\$1,308,000) is reasonably necessary to provide means for or to fund the actual cost of the replacement or reconstruction of existing property and is consistent with the public interest, and that the amount of said notes does not exceed twenty per cent (20%) of the amount of capital stock of the petitioner actually paid in, computed as provided in chapter 620 of the Acts of the year 1908, —

It is

Ordered, That the approval of the Commission be hereby given to the issue by the Bay State Street Railway Company, under the provisions of section 108 of Part III of chapter 463 of the Acts of the year 1906, as amended by chapter 671 of the Acts of the year 1914, of notes to an amount not exceeding at par value one million three hundred eight thousand dollars (\$1,308,000), bearing interest at a rate not exceeding six per cent (6%) and maturing and payable as follows, viz.: —

August 1, 1918,	.	.	.	.	.	.	.	.	.	.	\$131,000
August 1, 1919,	.	.	.	.	.	.	.	.	.	.	131,000
August 1, 1920,	.	.	.	.	.	.	.	.	.	.	131,000
August 1, 1921,	.	.	.	.	.	.	.	.	.	.	131,000
August 1, 1922,	.	.	.	.	.	.	.	.	.	.	131,000
August 1, 1923,	.	.	.	.	.	.	.	.	.	.	131,000
August 1, 1924,	.	.	.	.	.	.	.	.	.	.	131,000
August 1, 1925,	.	.	.	.	.	.	.	.	.	.	131,000
August 1, 1926,	.	.	.	.	.	.	.	.	.	.	131,000
August 1, 1927,	.	.	.	.	.	.	.	.	.	.	129,000

as an issue of notes reasonably necessary and of the amount required for the purpose of purchasing new passenger cars under a conditional sale agreement made in substantial accordance with

the memorandum accompanying the petition, thus providing means for or funding the actual cost of replacing rolling stock and other items of property substantially as set forth in the schedule attached to the petition.

It is

Further ordered, That the company shall, within thirty days of the date of this order, create, under the supervision of the accounting department of the Commission, a ledger account to be called "Replacement Suspense Account," to which shall be charged the book value of the property to be replaced by the aforesaid new passenger cars; that to said account shall be credited each year an amount equal to the par value of the aforesaid notes maturing during said year, as well as any amounts from time to time received from the sale of property which has been charged to said account; that sufficient additional property shall from time to time be charged to said account, if necessary, so that a credit balance shall not exist at the end of the ten-year period; and that, within thirty days after said final payment, said "Replacement Suspense Account" shall be closed out and any debit balance charged to the profit and loss account.

It is

Further ordered, That any amount paid by the company to the vendor, under the aforesaid conditional sale agreement, representing the difference between the par value of the notes hereby approved and the value at which they are taken by said vendor, shall be amortized from the earnings of the company on or before the final payment of said notes.

It is

Further ordered, That all contracts entered into by the company in connection with the aforesaid conditional sale agreement shall be filed with the Commission as soon as executed.

It is

Further ordered, That the order of the Commission dated December 2, 1916 (P. S. C. 1381), approving the issue of serial coupon notes of the face value of two million five hundred thousand dollars (\$2,500,000) be hereby rescinded, none of said notes having been issued thereunder.

By the Commission,

CHARLES E. MANN,

AUGUST 17, 1917.

[P. S. C. 1848]

Executive Secretary.

Petition of the Boston Elevated Railway Company for approval of the use for other purposes of an unexpended balance of the proceeds of issues of capital stock authorized by the Board of Railroad Commissioners for application toward the payment of the original cost of the Main street subway in Cambridge.

The petitioner asks for the approval by the Commission of the use, for additions and improvements to its property other than the construction and equipment of the Main street subway in Cambridge, of the unexpended balance of the proceeds of certain issues of capital stock authorized by the Board of Railroad Commissioners under orders dated December 18, 1908, and December 6, 1912, for the payment of the original cost of said Main street subway (which subway the company was authorized to construct by the provisions of chapter 520 of the Acts of 1906) and its appurtenances and equipment, exclusive of rolling stock.

The issues of stock and the proceeds therefrom were as follows: —

December 18, 1908, 55,000 shares,	\$6,075,604 47
December 6, 1912, 15,600 shares,	1,638,000 00
	<hr/>
Total,	\$7,713,604 47
Expenditures for the Main street subway to November 1, 1917,	7,412,828 23
	<hr/>
Unexpended balance,	\$300,776 24

The expenditures of the company from September 1, 1912 to September 1, 1915, for additions and improvements to its property other than the construction and equipment of the Main street subway amount, as charged, to \$4,295,817.32, which amount is \$1,463,633.12 in excess of the balance of \$2,832,164.20 applicable to such additions and improvements from the sale of stock and bonds authorized by the Board of Railroad Commissioners under date of December 6, 1912. These expenditures are now under examination by the engineering and accounting departments of the Commission and, while this work has not as yet been completed, they report that sufficient progress has been made so that they are able to certify that the application may properly be approved of the unexpended balance in question of \$300,776.24, to payment of indebtedness incurred for additions and improvements not covered by previously authorized securities.

It appearing, after notice and hearing, and upon further investigation, that the proposed application of the proceeds of the above former issues of stock are for lawful purposes and are consistent with the public interest, — it is

Ordered, That the approval of the Commission be hereby given to the application by the Boston Elevated Railway Company of three hundred thousand, seven hundred seventy-six dollars and twenty-four cents (\$300,776.24), realized as a part of the proceeds of stock issued under orders of the Board of Railroad Commissioners dated December 18, 1908, and December 6, 1912, to cover the cost of the Main street subway and its appurtenances and equipment, exclusive of rolling stock, and being the amount received by the company in excess of that required for such purpose, to the payment of indebtedness incurred for permanent additions to and improvements upon the property of the petitioner from September 1, 1912 to September 1, 1915, as described in a schedule on file in this office, for which issues of stock or bonds have not previously been approved.

Attest: ANDREW A. HIGHLANDS,

DECEMBER 20, 1917. [P. S. C. 1949]

Secretary.

Petition of the Boston Elevated Railway Company for authority to use the proceeds of the \$500,000 of bonds which have been returned to the company by the treasurer and receiver-general of the Commonwealth for the purpose of paying certain indebtedness heretofore incurred for additions to and improvements upon the company's property.

By the terms of its charter the Boston Elevated Railway Company was required, at the time of its organization, to deposit with the treasurer of the Commonwealth the sum of \$500,000 in cash or approved securities, as a guarantee fund for the payment of executions for abutters' damages, and for any failure of the company to carry out the requirements of the charter. This deposit was in the form of 3 per cent Massachusetts State bonds. Upon recommendation of the special commission appointed to consider the financial condition of the company, made to the General Court in February, 1917, it was provided in section 1 of Part I of chapter 373 of the Special Acts of 1917 that these bonds should be returned to the company by the treasurer and receiver-general, and this has been done. Section 2 provided that the proceeds of the securities so returned should be used "for no other than those capital purposes for which the company may

lawfully issue stock or bonds, to such extent as the Public Service Commission; after a public hearing, shall approve as reasonably necessary for any such purpose or purposes." Under this statutory provision the company now asks the Commission to approve the use of these proceeds for the purpose of paying certain indebtedness heretofore incurred by it for additions to and improvements upon its property. It appears, according to the company's sworn statement, that it has expended for additions and improvements \$2,263,635.72 in excess of the proceeds of stock and bonds heretofore authorized. The work of checking these expenditures has not been entirely completed by the engineering and accounting departments of the Commission, but sufficient progress has been made so that the departments are able to report that an amount substantially in excess of \$500,000 represents additions to and improvements upon the property, for which no securities have been issued or authorized.

ORDER.

It appearing, after notice and hearing and upon further investigation by the accounting department of the Commission, that the proposed application of proceeds of securities, amounting to five hundred thousand dollars (\$500,000) deposited with the treasurer and receiver-general of the Commonwealth under the provisions of section 13 of chapter 548 of the Acts of 1894 and section 13 of chapter 500 of the Acts of 1897 by the Boston Elevated Railway Company and returned to said company by said treasurer and receiver-general under the provisions of section 1 of Part I of chapter 373 of the Special Acts of 1917 is reasonably necessary for lawful purposes and consistent with the public interests, —

It is

Ordered, That the approval of the Commission be hereby given to the application by the Boston Elevated Railway Company of the proceeds of five hundred thousand dollars (\$500,000) in bonds returned to said company by the treasurer and receiver-general of the Commonwealth as above stated, toward the cost of permanent additions to and improvements upon the property of the petitioner made prior to September 1, 1915, being for capital purposes, for which no issues of capital stock or bonds have been heretofore authorized, as shown on schedules on file in this office.

By the Commission,

ANDREW A. HIGHLANDS,

AUGUST 28, 1917. [P. S. C. 1853]

Secretary.

Petition of the Boston and Albany Railroad Company for approval of an issue of bonds.

This is a petition of the Boston and Albany Railroad Company for approval of an issue of coupon or registered bonds to an amount not exceeding one million (1,000,000) dollars, said bonds to bear date of June 1, 1917, to be payable in twenty-five (25) years from date thereof, and to bear interest at a rate not to exceed five per cent (5%) per annum, the proceeds to be used to meet the cost of permanent additions to and improvements upon the property of the company already made to the amount of seven hundred forty-eight thousand seven hundred forty-seven dollars and thirty-three cents (\$748,747.33) and for payment of certain proposed expenditures to the amount of approximately two hundred eighty-five thousand dollars (\$285,000). The proposed expenditures are as follows:—

Third track, eastbound, West Brimfield to West Warren,	\$180,000
Connecting track No. 4, Athol Junction to Oak street,	84,000
Eastbound siding for 80 cars, Westborough,	21,000
<hr/>	
Total,	\$285,000

These estimates have been carefully checked by the accounting and engineering departments of the Commission, from plans and estimates submitted by the company and are found to be reasonable. In the case of the work already done, vouchers and contracts have been examined and much the larger portion of the property has been inspected upon the ground. While certain details of this work remain to be completed, the departments report that they are satisfied that additions and improvements have been made, sufficient in amount to justify the issue of the bonds desired.

After notice and hearing and further investigation, —

It is

Ordered, That the approval of the Commission be hereby given to the issue by the Boston and Albany Railroad Company of coupon or registered bonds to an amount not exceeding at par value one million dollars (\$1,000,000), payable twenty-five (25) years from the date thereof and bearing interest at a rate not to exceed five per cent (5%) per annum, as an issue of bonds reasonably necessary and of the amount required for the purpose set forth in the company's petition, filed June 11, 1917, of paying certain indebtedness properly incurred and to be incurred

for permanent additions to and improvements upon the railroad property of the petitioner, described in the schedule on file with the petition.

It is

Further ordered, That copies of all contracts covering construction work to be done, as shown by the schedule filed, shall be submitted to the accountant of the Commission as soon as executed; also that the company shall keep true and accurate accounts, showing the receipt and application by it of the proceeds of the sale of all bonds authorized to be issued hereby and report in writing to the Commission at the end of each period of three months succeeding the issue of said bonds, unless otherwise ordered, its receipts and disbursements during such period of the proceeds of said bonds, said report to be made as directed by the accountant of the Commission.

Any excess in the proceeds of these bonds which may be realized from premiums shall be held for such application to cost of permanent additions to and improvements upon the property of the petitioner as the Commission shall hereafter approve.

Attest: ANDREW A. HIGHLANDS,

JULY 27, 1917. [P. S. C. 1782]

Secretary.

Petitions of the Boston and Worcester Street Railway Company for approval of an issue of first mortgage bonds and for approval of an issue of first preferred capital stock.

These are two petitions of the Boston and Worcester Street Railway Company, one for approval of an issue of first mortgage $4\frac{1}{2}$ per cent bonds of the par value of \$40,000, and the other for approval of an issue of additional 6 per cent cumulative first preferred stock of the par value of \$270,000. The proceeds of these securities are to be used in part for the payment of floating indebtedness representing expenditures already made for additions and betterments, and in part for rolling stock and other property which the company is about to purchase, and for additions and betterments which it proposes to make, all as set forth in detail in schedules filed with the petitions. These schedules have been examined by the engineering and accounting departments of the Commission, the property referred to has been inspected, so far as it is in existence, and unit prices have been checked. In the case of property to be acquired and the proposed new construction, the departments report that the

prices which appear against the various items represent in most cases actual bids submitted, and appear as reasonable as can be expected under existing conditions. They report that the expenditures which have been made or are to be made and which may properly be capitalized by an issue of additional stock or bonds amount, after allowing for property sold or destroyed since the last issue of securities, to \$319,947.30.

It is, therefore,

Ordered, That the approval of the Commission be hereby given to the issue by the Boston and Worcester Street Railway Company of coupon or registered bonds to an amount not exceeding at par value forty thousand dollars (\$40,000), payable twenty (20) years from the date thereof and bearing interest at the rate of four and one half per cent ($4\frac{1}{2}\%$) per annum, as an issue of bonds reasonably necessary and of the amount required for the purpose of paying floating indebtedness properly incurred for additions and betterments in the property of the company and for the payment for equipment to be purchased as described in a schedule on file in this office.

Any excess in the proceeds of these bonds which may be realized from premiums shall be held for such application to cost of permanent additions to and improvements in the property of the petitioner as the Commission shall hereafter approve.

And it is

Further ordered, That the approval of the Commission be hereby given to the issue by the Boston and Worcester Street Railway Company at the price of one hundred dollars (\$100) per share, of not exceeding two thousand seven hundred (2,700) additional shares of six per cent (6%) cumulative preferred capital stock, amounting at par value to two hundred seventy thousand dollars (\$270,000), having the preferences, voting powers, restrictions and qualifications thereof which have been authorized by the stockholders and directors of the company and approved by an order adopted by the Board of Railroad Commissioners under date of February 21, 1911, and an order adopted by the Commission under date of September 27, 1916, as set out in copies of votes described in and annexed to the petition of the company dated April 18, 1917, as an issue of stock reasonably necessary and of the amount required for the purpose of paying floating indebtedness properly incurred for additions and betterments in the property of the company and for the payment for equipment to be purchased as described in a schedule on file with the petition.

Any excess in the proceeds of these shares over the amount to be applied as above stated shall be held for such application to the cost of permanent additions to and improvements in the property of the company as the Commission shall hereafter approve.

It is

Further ordered, That all contracts covering the purchase of property to be acquired or the purchase of material or machinery to be used in connection with any proposed new construction shall be filed with the Accountant of the Commission as soon as executed; also that the company shall keep true and accurate accounts showing the receipt and application by it of the proceeds of the sale of all stock authorized to be issued hereby and report in writing to the Commission at the end of each period of one month succeeding the issue of said stock, unless otherwise ordered, its receipts and disbursements during such period of the proceeds of said stock, said report to be made as directed by the Accountant of the Commission.

Attest: ANDREW A. HIGHLANDS,
MAY 26, 1917. [P. S. C. 1734, 1735] Secretary.

Petition of the Elizabeth Islands Telephone Company for approval of an issue of original capital stock.

It appearing, after notice and hearing and full investigation by the accounting department of the Commission, that the petitioner has been incorporated under the provisions of general law for the purpose of doing a general telephone business in the commonwealth; that the total amount of capital stock of the petitioner as fixed in its agreement of association and approved by the Commissioner of Corporations is five thousand (5,000) dollars, and that an issue of capital stock for the purposes stated in the petition is lawful and consistent with the public interest, —

It is

Ordered, That the approval of the Commission be hereby given to the issue by the Elizabeth Islands Telephone Company of shares of capital stock not exceeding fifty in number, amounting at par value to five thousand (5,000) dollars, as an issue of stock reasonably necessary and of the amount required for the purchase of telephone property now in the hands of the Trustees of Naushon Island and the Pasque Island Club, as shown in detailed statement on file with the petition.

Said shares are to be issued to the subscribers to the capital stock of the company, or their assigns, upon the full payment of the par value thereof in cash, and no shares are to be issued until the whole amount of capital stock as above fixed has been actually paid in cash.

Attest: ANDREW A. HIGHLANDS,

APRIL 13, 1917. [P. S. C. 1722]

Secretary.

*Petition of the Fitchburg and Leominster Street Railway Company
for approval of issue of bonds.*

This is a petition of the Fitchburg and Leominster Street Railway Company for approval of an issue of mortgage bonds to an amount not exceeding one hundred fifty thousand dollars (\$150,000), payable twenty (20) years from the date thereof and to bear interest at a rate not exceeding four and one-half ($4\frac{1}{2}$) per cent per annum, the proceeds to be used for the purpose of providing payment for a like amount of bonds of the petitioner which become due on April 1, 1917.

It appearing, after notice and hearing and further investigation, that the proposed issue of bonds is for a lawful purpose and is consistent with the public interests, —

It is

Ordered, That the approval of the Commission be hereby given to the issue by the Fitchburg and Leominster Street Railway Company of mortgage bonds to an amount not exceeding at par value one hundred fifty thousand dollars (\$150,000), payable twenty (20) years from date thereof and bearing interest at a rate not to exceed four and one-half ($4\frac{1}{2}$) per cent per annum, as an issue of bonds reasonably necessary and of the amount required for the purpose of providing funds for the payment or refunding of bonds of the petitioner of a like amount which become due on April 1, 1917.

Any excess in the proceeds of this issue of bonds over the amount above named which may be realized from premiums shall be held for such application to the cost of permanent additions to and improvements in the property of the petitioner as the Commission shall hereafter approve.

Attest: ALLAN BROOKS,

FEBRUARY 9, 1917. [P. S. C. 1617]

Assistant Secretary.

Petition of the Highland Telephone Company for authority to issue additional capital stock.

This is a petition of the Highland Telephone Company for approval of an additional issue of capital stock amounting at par to \$7,000, the proceeds to be used in funding the cost of additions to and improvements upon the property of the company made since the date of the last stock issue. The petitioner is a small company operating farmers' lines in Dana, New Salem, Prescott, Shutesbury, Leverett and Wendell. The par value of its outstanding stock is but \$5,000 and there is no funded debt. The additions and improvements in question are represented in part by floating indebtedness and have in part been paid for out of surplus income. The balance sheet on December 31, 1916, was as follows:—

<i>Assets.</i>	
Property accounts,	\$12,135 48
Notes and accounts receivable,	3,991 46
Supplies on hand,	65 00
Cash on hand,	10 51
Total,	\$16,202 45
<i>Liabilities.</i>	
Capital stock,	\$5,000 00
Notes payable,	1,300 00
Accounts payable,	2,349 43
Surplus,	7,553 02
Total,	\$16,202 45

The accounts and records kept by the company have been so inadequate that it was necessary for the Commission to inventory the entire property in order to determine whether or not the additions and improvements claimed had in fact been made. This inventory, which was made by the telephone and telegraph department of the Commission, indicated a reasonable original cost for the entire property, which was in good condition, somewhat in excess of \$12,000, thus verifying the company's claims.

It remains to determine whether the issue of stock desired is "reasonably necessary," to use the language of the statute, for the purpose of funding the cost of these additions and improvements. So far as this cost has been met from borrowed funds, the propriety of such a stock issue is evident; but it is not so clear in the case of that part of the cost which has been met out

of surplus accumulations. While the company has paid no dividends recently, it holds, according to the balance sheet, notes and accounts receivable sufficient in amount, if collected, to pay a dividend of nearly 80 per cent on the stock outstanding, although the company has been in existence, according to the information furnished in its annual return, but 10 years. Under the circumstances there seems no necessity, in order to make possible a reasonable return to the stockholders, of reimbursing the company's cash account, by means of an issue of stock, for income expended upon additions and improvements to the property. The amount so expended might, indeed, be regarded as a provision for depreciation, for no other provision has been made. It may also be said that investing undivided profits in fixed property is, in effect, dedicating them to the capital account, and the issue of stock to represent such property would be analogous to the declaration of a stock dividend, which is prohibited by section 20 of chapter 109 of the Revised Laws. Notes and accounts payable total \$3,649.43. The Commission finds that the issue of additional stock of the par value of \$3,600 is reasonably necessary for the purpose of paying floating indebtedness properly incurred for additions to and improvements upon the property of the company, but is unable to give its approval to the issue of the full amount desired by the petitioner.

It is, therefore,

Ordered, That the approval of the Commission be hereby given to the issue by the Highland Telephone Company of additional shares of capital stock not exceeding thirty-six (36) in number, amounting at par value to three thousand six hundred dollars (\$3,600), as an issue of stock reasonably necessary and of the amount required for the payment of floating indebtedness properly incurred in the construction and equipment of its plant, and in the purchase of property necessary for its operation.

Attest: FREDERICK J. MACLEOD,

SEPTEMBER 21, 1917. [P. S. C. 1406]

Chairman.

Petition of the Nantucket Railroad Company for authority to reduce its capital stock from \$125,000 to \$50,000, and for approval of an issue of bonds to the amount of \$50,000.

The petitioner, the Nantucket Railroad Company, was incorporated by chapter 391 of the Acts of 1910, for the purpose of acquiring the property and franchises of the Nantucket Central

Railroad Company, which was then in receiver's hands. Section 3 of this statute is as follows: —

The capital stock of said corporation shall be one hundred and twenty-five thousand dollars. The corporation may issue bonds for its corporate purposes, secured by mortgage of its property and franchise. The said stock and bonds shall be issued in accordance with the laws of this commonwealth relating to the issue of stock and bonds by railroad corporations, in force at the time when such issue is made.

Under this section the Board of Railroad Commissioners, on July 8, 1910, approved an issue of capital stock of the par value of \$100,000, and this stock was duly issued and is now outstanding. The remaining shares authorized by the act have not been issued but are held in the treasury of the company. No further issue of stock or bonds has ever been approved, either by the Board of Railroad Commissioners or by this Commission.

The petitioner states that it has no outstanding debts at the present time, except that it is indebted in the sum of \$75,000 to the Empire Trust Company, a banking corporation of the state of New York, successor by merger to the Windsor Trust Company. On February 1, 1912, the petitioner gave its promissory note for this amount to the Windsor Trust Company and also, as security, a first mortgage covering all of its property and franchises. The petitioner further states that this mortgage was duly recorded; but the issue of the note so secured was never approved by the Board of Railroad Commissioners or by this Commission and the validity of the transaction may be open to question. In the sworn returns of the company for the years ended June 30, 1915, and June 30, 1916, the note has not been carried as a liability on the balance sheet. Both the note and the mortgage are now owned by the Empire Trust Company, which is also the owner of 938 (out of a total of 1,000) shares of the capital stock of the petitioner.

It appears that the petitioner has now made an arrangement with the Empire Trust Company under which, if the approval of this Commission is secured, the petitioner has agreed to deliver to the trust company mortgage bonds of \$50,000 par value, and the trust company has agreed, in consideration thereof, to surrender to the petitioner for cancellation 500 shares of the latter's capital stock, to cancel and discharge of record the aforesaid mortgage, to surrender the petitioner's note for \$75,000 and to release the petitioner from all liability thereon, so that, when the transaction is completed, the petitioner will have

\$50,000 of outstanding capital stock and a bonded indebtedness of \$50,000, and no other indebtedness, instead of outstanding capital stock to the amount of \$100,000 as at present. The petitioner therefore prays the Commission to authorize it to reduce its capital stock from \$125,000, the amount authorized by statute (\$100,000 being actually issued and outstanding), to \$50,000, by acquiring and cancelling in the manner set forth 500 of its outstanding shares in addition to the 250 shares not issued and now held in its treasury, and to authorize the petitioner to issue for this purpose bonds in the aggregate principal sum of \$50,000, to be secured by mortgage or deed of trust covering all the property and franchises of the petitioner, including all after-acquired property.

Railroad companies are given, by section 25 of Part II of chapter 463 of the Acts of 1906, authority to reduce the amount of their capital stock, provided the amount when so reduced does not fall below the limit prescribed in section 14 of the same Part II of said chapter. The Nantucket Railroad Company is a narrow gauge railroad and in the case of such roads the limit is \$5,000 per mile. As this railroad is but 9.12 miles long, a capital stock of \$50,000 would be within the law. The Commission has also decided, upon an analogous petition brought by the Norwood, Canton and Sharon Street Railway Company, that a company may issue bonds for the purpose of retiring a like amount of capital stock, provided it "has outstanding no notes or debts except current obligations of small amount which are discharged from week to week or from month to month, so that there are no creditors or other persons whose rights or interests might be prejudiced by the proposed issue of bonds and reduction of capital stock." (See 2d Annual Report P. S. C., pp. 265, 266.) In the present case the only outstanding indebtedness, other than such current obligations, is the note for \$75,000 above mentioned, which is of doubtful validity. The proposed issue of bonds and reduction of capital stock were duly authorized by the stockholders of the petitioner at meetings called for the purpose and held on March 26 and April 16, 1917. The Commission is of the opinion that they are for lawful purposes and may properly be approved, provided the aforesaid note for \$75,000 is surrendered for cancellation, according to agreement, and a release and discharge of this indebtedness is duly executed, together with a certificate of satisfaction of the mortgage by which it is secured. An order approving the issue of bonds and reduction of stock upon these conditions is entered below.

ORDER.

It appearing that the Commission, after due notice, entered upon an investigation concerning the propriety of the proposed issue of bonds and reduction of capital stock by the Nantucket Railroad Company, and that on the date hereof it has made and filed a report containing its findings of fact and conclusions thereon, which said report is hereby referred to and made a part hereof, It is

Ordered, That the approval of the Commission be hereby given to the issue by the Nantucket Railroad Company of bonds in the aggregate principal sum of fifty thousand dollars (\$50,000), to be secured by a mortgage or deed of trust covering all the property and franchises of said company, including all after-acquired property, said bonds to bear interest at the rate of four (4) per cent per annum, payable semi-annually, each bond to be of one thousand dollars (\$1,000) par value; one of said bonds to be paid each twelve months after the date of issue for nineteen years and the balance of said bonds to be paid at the expiration of the twentieth year from the date thereof, as an issue of bonds reasonably necessary and of the amount required for the purpose of purchasing and retiring capital stock of the company at par to an aggregate amount of fifty thousand dollars (\$50,000), by exchanging the same at its par value, none of the bonds herein authorized to be issued until the total amount of said stock, amounting at par value to fifty thousand dollars (\$50,000), has been surrendered to the treasurer of the company and all certificates of the shares of stock so acquired have been cancelled and retired, nor until the petitioner has received for cancellation its promissory note for seventy-five thousand dollars (\$75,000), dated February 1, 1912, together with a duly executed release and discharge of said indebtedness of seventy-five thousand dollars (\$75,000), and a duly executed certificate of satisfaction of the mortgage by which said indebtedness is secured.

And it is

Further ordered, That, upon the purchase and retirement of said capital stock to an aggregate amount of fifty thousand dollars (\$50,000), as hereinbefore provided, the capital stock of the Nantucket Railroad Company, issued and outstanding, be reduced to fifty thousand dollars (\$50,000).

By the Commission,

ALLAN BROOKS,

Assistant Secretary.

MAY 10, 1917. [P. S. C. 1657]

*Petition of the Norton, Taunton and Attleboro Street Railway
Company for approval of issue of original capital stock.*

It appearing, after notice and hearing and further investigation that the petitioner has been incorporated under the provisions of section 145 of Part III of chapter 463 of the Acts of 1906, for the purpose of holding, owning and operating the street railway formerly belonging to the Norton and Taunton Street Railway Company and purchased at a sale made by receiver, pursuant to an order of the Supreme Judicial Court of Suffolk County; that the total amount of the capital stock of the petitioner as fixed in its agreement of association and approved by this Commission by an order dated December 21, 1916, as not exceeding the fair replacement cost of the railway and property, is one hundred twenty thousand dollars (\$120,000), and that an issue of capital stock to that amount is lawful and consistent with the public interest, —

It is

Ordered, That the approval of the Commission be hereby given to the issue by the Norton, Taunton and Attleboro Street Railway Company of shares of capital stock not exceeding twelve hundred (1,200) in number, amounting at par value to one hundred twenty thousand dollars (\$120,000), as an issue of capital stock reasonably necessary and of the amount required for the purposes contemplated in the statute above named.

Said shares are to be issued to the subscribers to the capital stock of the company, or their assigns, upon the payment of the par value thereof in cash, and no shares are to be issued until the whole amount of capital stock as above fixed has been actually paid in cash.

Attest: ANDREW A. HIGHLANDS,

AUGUST 7, 1917. [P. S. C. 1780]

Secretary.

*Petition of the Norton, Taunton and Attleboro Street Railway
Company for approval of an issue of bonds.*

The Commission, in an order dated December 21, 1916, on the petition of the purchasers of the railway and property formerly owned and operated by the Norton and Taunton Street Railway Company, subsequently acquired by a new corporation known as the Norton, Taunton and Attleboro Street Railway Company, determined the fair replacement cost of said railway and property to be \$213,864, and approved the sum of \$120,000 as the amount

of capital stock of the new company to be stated in the agreement of association. The issue of this stock and its application towards the purchase price of the railway were later approved in an order dated August 7, 1917. The petitioner has now acquired additional property consisting of certain rolling stock and a car barn provided by the bondholders' committee during the period of receivership, which have been valued by the engineers of the Commission at \$27,058, the aggregate valuation of all the property acquired by the petitioner thus amounting to \$240,922.

The present application requests the approval of the issue of bonds to the amount of \$120,000 to pay for the balance of the purchase price of the railway and property and the purchase price of the rolling stock and car barn thus acquired.

It appearing, after notice and hearing and further investigation that the proposed issue of bonds is for a lawful purpose and is consistent with the public interest, —

It is

Ordered, That the approval of the Commission be hereby given to the issue by the Norton, Taunton and Attleboro Street Railway Company of mortgage bonds to an amount not exceeding at par value one hundred twenty thousand dollars (\$120,000), payable twenty (20) years from the date thereof and bearing interest at the rate of five per cent (5%) per annum, as an issue of bonds reasonably necessary and of the amount required for the purpose set forth in the company's petition, filed with the Commission on September 22, 1917, of providing funds to pay for the balance of the purchase price of the railway and property formerly owned and operated by the Norton and Taunton Street Railway Company, acquired by the petitioner through a receiver's sale, and of the purchase price of certain rolling stock and a car barn, furnished and erected by the bondholders' committee during the period of receivership and also acquired by the petitioner.

Any excess in the proceeds of said bonds over the amount above named, which may be realized from premiums, shall be held for such application to cost of permanent additions to and improvements upon the property of the petitioner as the Commission shall hereafter approve.

Attest: ANDREW A. HIGHLANDS,
DECEMBER 7, 1917. [P. S. C. 1905]

Secretary.

Petition of the Springfield Street Railway Company for approval of issue of mortgage bonds.

It appearing, after notice and hearing and full investigation by the engineering and accounting departments of the Commission that the proposed issue of bonds is for lawful purposes and is consistent with the public interests, it is

Ordered, That the approval of the Commission be hereby given to the issue by the Springfield Street Railway Company of mortgage bonds to an amount not to exceed three million, two hundred seventy-five thousand dollars (\$3,275,000), face value, payable twenty (20) years from their date, and bearing interest at such rate or rates, not to exceed six per cent (6%) per annum, as hereinafter in this order provided, as an issue of bonds reasonably necessary and of the amount required for the following purposes: —

(1) The proceeds of bonds amounting to two million, three hundred five thousand dollars (\$2,305,000), face value, are to be applied exclusively to the payment, refunding or retiring of issues of bonds issued by the petitioner, or the payment of which has been assumed by the petitioner, by reason of the purchase by it of railway properties and franchises of certain other street railway companies and, except as to the bonds, hereinafter described, of the Woronoco Street Railway Company, as and when said issues of bonds severally mature, amounting in the aggregate to two million, three hundred five thousand dollars (\$2,305,000), face value, which issues of bonds are more particularly described as follows: —

NAME.	Date of Maturity.	Amount Outstanding.
Springfield Street Railway Company,	April 1, 1923,	\$1,700,000
Western Massachusetts Street Railway Company, .	February 1, 1926, . . .	200,000
Springfield and Eastern Street Railway Company, .	January 1, 1922, . . .	330,000
Woronoco Street Railway Company,	January 1, 1920, . . .	75,000

Seventy-five thousand dollars (\$75,000), face value, of said two million, three hundred five thousand dollars (\$2,305,000), face value, of bonds shall bear interest at a rate not to exceed six per cent (6%) per annum and the balance of said two million, three hundred five thousand dollars (\$2,305,000), face value, of bonds shall bear interest at such rate or rates not to exceed six per cent (6%) per annum as the board of directors of the petitioner may from time to time by vote determine, and, if the rate so determined shall exceed five per cent (5%) per annum, as the Commission, if then having jurisdiction and supervision over the issue

of street railway bonds, or any board or commission of the Commonwealth of Massachusetts, if such there then be, having jurisdiction and supervision over the issue of such bonds, shall approve.

(2) The proceeds of bonds amounting to nine hundred seventy thousand dollars (\$970,000), face value, bearing interest at not to exceed six per cent (6%) per annum, shall be applied exclusively to the following purposes: The proceeds of seven hundred and thirty-eight thousand dollars (\$738,000) of said bonds to provide means for the payment of money borrowed or indebtedness incurred for additions and betterments to the property of the petitioner, included in a statement of the petitioner's auditor dated May 23, 1917, marked Schedule A, on file in the office of the Commission, and the proceeds of two hundred thirty-two thousand dollars (\$232,000), face value, of said bonds to provide means for the payment of floating indebtedness incurred in providing the petitioner with working capital, which amount the Commission determines is properly required for such purpose and approves as consistent with the interests of the public and of the stockholders of said company and as not unreasonably reducing the security of any bond previously issued.

Any excess in the proceeds of these bonds which may be realized from premiums shall be held for such application to cost of permanent additions to and improvements upon the property of the petitioner as the Commission shall hereafter approve.

Attest: ANDREW A. HIGHLANDS,
NOVEMBER 2, 1917. [P. S. C. 1783] Secretary.

Petition of the Swansea and Seekonk Street Railway Company for approval of issue of original capital stock.

The Swansea and Seekonk Street Railway Company, a corporation formed by the purchasers of the property of the Providence and Fall River street railway, received a charter of incorporation on October 31, 1917, the amount of capital stock of said company, named in its agreement of association heretofore submitted to and approved by this Commission, being one hundred thousand dollars (\$100,000), which amount has been subscribed by responsible parties and paid in in cash to the treasurer.

At the request of the Commission its engineering department has made a valuation of the property of the Swansea and Seekonk Street Railway Company, formerly the property of the Providence and Fall River street railway, and has made a report as follows: —

Estimated reproduction cost, road and equipment,	. . .	\$262,975
Estimated depreciation on same,	. . . . .	95,705
Estimated value November 10, 1917,	. . . . .	167,272

In preparing this valuation, prices averaged for 5 years (1912-1916) were applied to the physical property, instead of using prevailing abnormally high prices. In addition to the above property the engineering department found certain material in the nature of stock and supplies which it appraised conservatively at a total value of two thousand one hundred fifty dollars (\$2,150).

After notice and hearing and further investigation, the Commission having determined that the fair value of the railway and property of the Swansea and Seekonk Street Railway Company, and formerly the property of the Providence and Fall River Street Railway Company, acquired by the petitioner, is one hundred sixty-seven thousand, two hundred seventy-two dollars (\$167,272), and that the issue of the amount of capital stock fixed in the charter of the petitioner, at one hundred thousand dollars (\$100,000) is lawful and consistent with the public interest, —

It is

Ordered, That the approval of the Commission be hereby given to the issue by the Swansea and Seekonk Street Railway Company of shares of capital stock not exceeding one thousand (1,000) in number, amounting at par value to one hundred thousand dollars (\$100,000), as an issue of stock reasonably necessary and of the amount required for the purpose of holding, owning and operating the street railway formerly belonging to the Providence and Fall River Street Railway Company and purchased by the petitioner.

Said shares are to be issued to the subscribers to the capital stock of the company, or their assigns, upon the full payment of the par value thereof in cash, and no shares are to be issued until the whole amount of capital stock as above fixed, has been actually paid in cash.

Attest: ANDREW A. HIGHLANDS,

DECEMBER 19, 1917. [P. S. C. 1956]

Secretary.

Petition of the West End Street Railway Company for approval of an issue of bonds.

This is a petition of the West End Street Railway Company, representing that it desires to issue negotiable bonds to the amount of one million five hundred eighty-one thousand dollars (\$1,581,000) par value, as being reasonably requisite for the purpose of providing means for the payment of bonds of a like amount issued by the petitioner and maturing August 1, 1917.

It appears that under date of July 2, 1915, the Commission issued an order (P. S. C. 959) approving an issue by the West End Street Railway Company of bonds to the amount of four million seven hundred forty-three thousand dollars (\$4,743,000) for the purpose of refunding a like amount of bonds which became due August 1, 1915. It was not deemed expedient at that time to issue long-term bonds, so the company issued bonds to the amount of four million seven hundred forty-three thousand dollars (\$4,743,000) bearing interest at the rate of five per cent (5%) per annum, of which amount one million five hundred eighty-one thousand dollars (\$1,581,000) were payable in one year from August 1, 1915; one million five hundred eighty-one thousand dollars (\$1,581,000) were payable in two years, and one million five hundred eighty-one thousand dollars (\$1,581,000) were payable in three years from August 1, 1915. The issue of bonds to the amount of one million five hundred eighty-one thousand dollars (\$1,581,000) for which approval is now asked is for the purpose of refunding the second-named of the issues to that amount referred to above.

It appearing, after notice and hearing and further investigation, that the proposed issue of bonds is for a lawful purpose and is consistent with the public interests, —

It is

Ordered, That the approval of the Commission be hereby given to the issue by the West End Street Railway Company of coupon or registered bonds to an amount not exceeding at par value one million five hundred eighty-one thousand dollars (\$1,581,000), said bonds to be payable not exceeding thirty (30) years from the date thereof, and to bear interest at a rate not to exceed six per cent (6%) per annum, as an issue of bonds reasonably necessary and of the amount required for the purpose of refunding outstanding bonds of the West End Street Railway Company to the amount of one million five hundred eighty-one thousand dollars (\$1,581,000) which become due August 1, 1917.

Any excess in the proceeds of this issue of bonds over the amount above named, which may be realized from premiums, shall be held for such application to the cost of permanent additions to and improvements upon the property of the petitioner as the Commission shall hereafter approve.

Attest: ANDREW A. HIGHLANDS,
MAY 21, 1917. [P. S. C. 1729] *Secretary.*

Petition of the West End Street Railway Company for approval of application of excess of proceeds of bonds heretofore authorized and for approval of an issue of additional common stock, to be sold at public auction.

This is a petition of the West End Street Railway Company for authority to issue twelve thousand (12,000) shares of common stock amounting to six hundred thousand dollars (\$600,000) for the purpose of paying the necessary cost, not heretofore provided for, of permanent additions to and improvements in the property of the petitioner made by the Boston Elevated Railway Company in accordance with the terms of the lease between said companies, and for authority to use for the same purpose the excess of proceeds of bonds heretofore authorized and issued for other purposes.

It appearing, after notice and hearing and full investigation by the accounting and engineering departments of the Commission, that there is due and payable from the petitioner to the Boston Elevated Railway Company the sum of \$618,248.29, representing additions and improvements made by the Boston Elevated Railway Company to and in the property of the petitioner prior to December 31, 1915; and that the application of the proceeds of former issues of bonds and the proposed issue of capital stock, to the extent necessary for the payment of this sum, are for lawful purposes and are consistent with the public interest, —

It is

Ordered, That the approval of the Commission be hereby given to the application by the West End Street Railway Company of thirty-three thousand five hundred thirty-nine dollars and sixteen cents (\$33,539.16), realized as a part of the proceeds of bonds issued under orders of the Commission dated April 14, 1914, July 2, 1915, and April 6, 1916, respectively, and being the amount received by the company in excess of that required for the purposes named in said orders, toward the cost of permanent additions to and improvements in the property of the petitioner made by the Boston Elevated Railway Company in accordance with the terms of the lease between said companies and described in the schedule on file with the petition.

And it is

Further ordered, That the approval of the Commission be hereby given to an issue by the West End Street Railway Com-

pany of additional shares of common stock not exceeding eleven thousand six hundred ninety-four (11,694) in number, amounting at par value to five hundred eighty-four thousand seven hundred dollars (\$584,700), as an issue of stock reasonably necessary and of the amount required for the purpose of paying the necessary cost, not heretofore provided for, of permanent additions to and improvements in the property of the petitioner made by the Boston Elevated Railway Company in accordance with the terms of the lease between said companies and described in the schedule on file with the petition.

It further appearing that the directors desire to dispose of said stock by public auction in the manner provided by law and that the amount of this issue does not exceed four per cent (4%) of the existing capital stock of the company, —

It is

Ordered, That the eleven thousand six hundred ninety-four (11,694) shares of common stock herein authorized be offered for sale by public auction in the city of Boston to the highest bidder at not less than par value to be actually paid in cash; and that the *Boston Daily Advertiser*, the *Boston Transcript* and the *Boston News Bureau* be prescribed as the daily newspapers in which notice of the time and place of such sale shall be published at least five (5) times during the ten (10) days immediately preceding the sale.

Any excess in the proceeds of these shares, over the amount to be applied as above stated, shall be held for such application to cost of permanent additions to and improvements in the property of the petitioner as the Commission shall hereafter approve.

Attest: ANDREW A. HIGHLANDS,

MARCH 24, 1917. [P. S. C. 1526]

Secretary.

Petition of the West End Street Railway Company for approval of an issue of bonds.

This is a petition of the West End Street Railway Company for approval of an issue of coupon or registered bonds to an amount not exceeding two million seven hundred thousand dollars (\$2,700,000), payable thirty (30) years from the date thereof and to bear interest at a rate not exceeding six per cent (6%) per annum, the proceeds to be used for the purpose of providing payment for a like amount of bonds of the petitioner which become due February 1, 1917.

It appearing, after notice and hearing and full investigation by the accounting department of the Commission, that the proposed issue of bonds is for a lawful purpose and is consistent with the public interest, —

It is

Ordered, That the approval of the Commission be hereby given to the issue by the West End Street Railway Company of coupon or registered bonds to an amount not exceeding, at par value, two million seven hundred thousand dollars (\$2,700,000), said bonds to be payable not exceeding thirty (30) years from date thereof and to bear interest at a rate not to exceed six per cent (6%) per annum, as an issue of bonds reasonably necessary and of an amount required for the purpose of refunding outstanding bonds of said West End Street Railway Company to the amount of two million seven hundred thousand dollars (\$2,700,000) which become due February 1, 1917.

Any excess in the proceeds of this issue of bonds, over the amount above named, which may be realized from premiums, shall be held for such application to the cost of permanent additions to and improvements upon the property of the petitioner as the Commission shall hereafter approve.

Attest: ANDREW A. HIGHLANDS,

JANUARY 10, 1917. [P. S. C. 1571]

Secretary.

*Petition of the West End Street Railway Company for approval
of an issue of bonds.*

It appearing, after notice and hearing and upon further investigation by the accounting and engineering departments of the Commission, that the proposed issue of bonds is reasonably necessary for a lawful purpose, —

It is

Ordered, That the approval of the Commission be hereby given to the issue by the West End Street Railway Company of coupon or registered bonds to an amount not exceeding at par value one hundred thirteen thousand dollars (\$113,000), said bonds to be payable not more than thirty (30) years from the date thereof, and to bear interest at a rate not exceeding seven per cent (7%) per annum, as an issue of bonds reasonably necessary and of the amount required for the purpose of paying the necessary cost, not hereinbefore provided for, of permanent additions to and

improvements upon the property of the petitioner made by the Boston Elevated Railway Company in accordance with the terms of the lease between said companies, and described in the schedule on file with the petition.

Any excess in the proceeds of these bonds, over the amount to be applied as above stated, shall be held for such application to cost of permanent additions to and improvements upon the property of the petitioner as the Commission shall hereafter approve.

Attest: ANDREW A. HIGHLANDS,
SEPTEMBER 4, 1917. [P. S. C. 1881] Secretary.

Petition of the West End Street Railway Company for approval of application of proceeds of former issues of capital stock and bonds, and for approval of an issue of bonds.

It appearing, after notice and hearing and upon further investigation by the accounting and engineering departments of the Commission, that the proposed application of proceeds of former issues of capital stock and bonds and the proposed issue of bonds are reasonably necessary for lawful purposes, — it is

Ordered, That the approval of the Commission be hereby given to the application by the West End Street Railway Company of twenty thousand, nine hundred ninety-four dollars and thirty cents (\$20,994.30) realized as a part of the proceeds of bonds issued under orders of this Commission dated April 6, 1916 and January 10, 1917, being the amount received by the company in excess of that required for the purposes named in said orders, and of sixteen thousand thirty dollars and thirty-seven cents (\$16,030.37) realized as a part of the proceeds of capital stock issued under an order of this Commission dated March 24, 1917, being the amount received by the company in excess of that required for the purposes named in said order toward the cost of permanent additions to and improvements upon the property of the petitioner made by the Boston Elevated Railway Company in accordance with the terms of the lease between said companies and described in the schedule on file with the petition.

And it is further

Ordered, That the approval of the Commission be hereby given to the issue by the West End Street Railway Company of coupon or registered bonds to an amount not exceeding at par value four hundred fifty-seven thousand dollars (\$457,000) said bonds to be payable not more than thirty years from the date thereof, and to

bear interest at a rate not exceeding seven per cent (7%) per annum as an issue of bonds reasonably necessary and of the amount required for the purpose of paying the necessary cost not hereinbefore provided for, of permanent additions to and improvements upon the property of the petitioner made by the Boston Elevated Railway Company in accordance with the terms of the lease between said companies, and described in the schedule on file with the petition.

Any excess in the proceeds of these bonds over the amount to be applied as above stated shall be held for such application to cost of permanent additions to and improvements upon the property of the petitioner as the Commission shall hereafter approve.

Attest: ANDREW A. HIGHLANDS,

AUGUST 24, 1917. [P. S. C. 1830]

Secretary.

Petition of the West End Street Railway Company for an increase in the rate of interest on the bonds of said company, the issue of which was approved by order of the Commission dated May 21, 1917.

On May 21, 1917, the Commission approved an issue of bonds of the West End Street Railway Company to an amount not exceeding at par value one million five hundred eighty-one thousand dollars (\$1,581,000), to provide means to pay bonds amounting to one million five hundred eighty-one thousand dollars (\$1,581,000) which become due on the first day of August, 1917, said bonds to be payable not exceeding thirty (30) years from the date thereof and to bear interest at a rate not to exceed six per cent (6%) per annum. Under the terms of the lease of the West End Street Railway Company by the Boston Elevated Railway Company all issues of bonds of the West End Street Railway Company must be sold at not less than par. It now appearing that the West End Street Railway Company, after inviting bids, has been unable to sell the bonds at the rate of interest authorized by the order of May 21, 1917, and it appearing that in order to enable the company to sell said bonds the rate of interest must be increased to a rate not exceeding seven per cent (7%) per annum, —

It is

Ordered, That the approval of the Commission be hereby given to the issue by the West End Street Railway Company of the bonds specified in the order of the Commission dated May 21,

1917, to an amount not exceeding at par value one million five hundred eighty-one thousand dollars (\$1,581,000) at a rate of interest not to exceed seven per cent (7%) per annum.

Attest: ANDREW A. HIGHLANDS,
JULY 27, 1917. [P. S. C. 1729] Secretary.

Petition of the Worcester Consolidated Street Railway Company for approval of an issue of bonds.

This is a petition that the Commission determine the amount of the petitioner's first and refunding four and one-half ($4\frac{1}{2}$) per cent mortgage bonds, dated August 1, 1910, to be secured by mortgage bearing that date, properly required for the purpose of retiring forty thousand (40,000) dollars face value debenture bonds of the Uxbridge and Blackstone Street Railway Company and approve the issue of the amount so determined. These debentures were assumed by the Worcester and Blackstone Valley Street Railway Company under authority of an order of the Board of Railroad Commissioners dated November 30, 1909, authorizing the consolidation of the two companies, and the total amount of funded indebtedness, two hundred forty thousand (240,000) dollars face value, became a part of the total funded debt of the petitioner, amounting to four million nine hundred sixty-seven thousand (4,967,000) dollars, through its assumption of the obligations of the Worcester and Blackstone Valley Street Railway Company by consolidation, under authority of an order of the Board of Railroad Commissioners dated May 3, 1911.

The petitioner also desired the approval of an issue of the same bonds for retiring and paying for two hundred thousand (200,000) dollars mortgage bonds of the Worcester and Blackstone Valley Street Railway Company now outstanding, but the directors by a vote adopted February 8, 1917, rescinded and repealed its vote passed on the twentieth day of January, 1917, specifying said issue, and later that prayer of the petition was withdrawn.

The petition was filed January 22, 1917, and, after public notice, hearings were given January 30, 1917, and March 26, 1917; and it appearing after further consideration that the proposed issue of bonds is for a lawful purpose and consistent with the public interest, —

It is

Ordered, That the approval of the Commission be hereby given to the issue by the Worcester Consolidated Street Railway Company of forty thousand (40,000) dollars face value first and refunding twenty-year, four and one-half ($4\frac{1}{2}$) per cent gold bonds, dated August 1, 1910, secured by a first and refunding mortgage dated August 1, 1910, for the purpose of paying and retiring forty thousand (40,000) dollars face value of twenty-year, five (5) per cent debenture bonds of the Uxbridge and Blackstone Street Railway Company maturing October 1, 1927, said debenture bonds having been assumed by the Worcester and Blackstone Valley Street Railway Company under an order of the Board of Railroad Commissioners dated November 30, 1909, authorizing a consolidation of said Uxbridge and Blackstone Street Railway Company and said Worcester and Blackstone Valley Street Railway Company.

Any excess in the proceeds of these bonds, which may be realized from premiums, shall be held for such application to cost of permanent additions to and improvements in the property of the petitioner, as the Commission shall hereafter approve.

Attest: ANDREW A. HIGHLANDS,

MARCH 27, 1917. [P. S. C. 1660]

Secretary.

Petition of the Worcester Consolidated Street Railway Company for approval of issue of first preferred stock in lieu of common stock issued and outstanding.

This petition was filed January 30, 1917, and, after public notice, hearings were given thereon February 9, 1917, and March 26, 1917. The general balance sheet, on file with the papers in the case, shows the present issued and outstanding fully-paid capital stock of the petitioner to be six million nine hundred twenty-six thousand (6,926,000) dollars, divided into sixty-nine thousand two hundred sixty (69,260) shares of the par value of one hundred (100) dollars each, and the company desires authority to issue in lieu of three million six hundred thousand (3,600,000) dollars thereof forty-five thousand (45,000) first preferred shares of capital stock of the par value of eighty (80) dollars each and of a total par value of three million six hundred thousand (3,600,000) dollars, which shall be designated by the name of "First Preferred Stock," to be entitled to preferences

and rights and be subject to restrictions and limitations fixed and determined at a meeting of the stockholders held March 26, 1917, by adjournment from a meeting held December 14, 1916, by a vote representing two-thirds in amount of the outstanding common stock of the company; and it appearing after further consideration that the proposed issue of stock is for a lawful purpose and is consistent with the public interests and that the limitations of the voting power of said preferred stock are consistent with the adequate protection of the public interests, —
It is

Ordered, That the approval of the Commission be hereby given to the issue by the Worcester Consolidated Street Railway Company at the price of eighty (80) dollars per share as fixed by its stockholders of not exceeding forty-five thousand (45,000) first preferred shares of capital stock amounting at par value to three million six hundred thousand (3,600,000) dollars, having the preferences, rights, restrictions and limitations, and being entitled to the rate of preferred dividend, which have been determined by vote of two-thirds in interest of its common stockholders at a meeting held March 26, 1917, by adjournment from a meeting duly called and held December 14, 1916, and which are hereby approved, as set out in a copy of said vote on file in this office, as an issue of stock reasonably necessary and of the amount required for the purpose of retiring thirty-six thousand (36,000) shares of the par value of three million six hundred thousand (3,600,000) dollars of its common capital stock heretofore legally issued and outstanding, the certificates of such common shares to be upon exchange surrendered and cancelled.

Attest: ANDREW A. HIGHLANDS,
MARCH 27, 1917. [P. S. C. 1659] *Secretary.*

CAR CONSTRUCTION.

Petition of Bay State Street Railway Company for approval of design of one-man cars and for permission to operate such cars over certain routes of its railway.

In this petition the Bay State Street Railway Company states that it has constructed two one-man cars of slightly different design, and seeks permission "to operate these cars, and secure and operate cars of a general and similar design, over the following routes":—

	Number of Cars.
Park avenue, Revere,	1
Ocean avenue, Revere (winter only),	1
Willows, Salem (winter only),	1
Beverly-Danvers via Bridge Street,	1
North Reading,	1
Arlington street, Haverhill,	1
Squantum, Quincy,	1
South Braintree-Randolph,	2
Fort Point, Weymouth,	1
East Weymouth-South Weymouth,	2
Oakdale, Dedham,	1
Hyde Park-Mattapan,	2
East Milton-Milton Lower Mills,	2
School street, Taunton,	1
Taunton depot,	1

In the "Bay State Rate Case," decided August 31, 1916, the use of one-man cars was strongly urged by the remonstrants against higher fares as a means of giving better service and increasing the net income of the company, and such use has also been advocated by operating experts who have examined the property, including Bion J. Arnold, Peter Witt and John A. Beeler. Cars of this type have recently been introduced with success on street railway systems in various parts of the country. The following comment is from a recent work on "Electric Railway Transportation":—

Among the most hopeful developments in economical operation is the one-man car, now in use on more than 125 roads. The dividing line be-

tween loss and profit in towns below 25,000 population and on big city lines of weak or moderate traffic is so thin that the change from two men to one man per car, producing lower platform cost or better headways at less expense, may convert loss into profit. On the small-town properties of the Illinois Traction System such cars have produced a saving of from 8 to 14 per cent. of the gross earnings.

As this indicates, one-man cars have two distinct uses. They may be used merely to decrease expense or they may be used to increase service and business without a corresponding increase in cost. On many short city lines where traffic is light, frequent service cannot be profitably maintained with ordinary equipment, yet infrequent service means loss of business, for people will often walk rather than wait long for a car. By using one-man cars on such routes a 20-minute headway can be changed to a 10-minute headway, or a 30-minute to a 15-minute, with little additional expense and with a gain in service to the public and in traffic to the company. At the public hearing, Mr. A. Stuart Pratt of the Stone and Webster Management Association gave the following account of recent experience in Fort Worth, Texas (Record, pp. 50, 51): —

. . . There we had a line that ran out into the suburbs with an infrequent schedule. It had been run for a good many years at a loss. The principal trouble with that line was that people could walk. The pavements were good and the sidewalks were good, and it was so near that business men would walk in and walk out. They would do that rather than to wait 20 minutes, perhaps, for a car. We put on a complete equipment of one-man cars on that line and doubled the schedule, running twice as many cars. The result in that case was very gratifying. We increased our receipts over 30 per cent, and by saving the power have reduced our operating expenses somewhat. People ride instead of walking, partially because they like the new cars — the step is so low that they get on quick; the cars accelerate quick, and they stop quicker — and partially because they do not have to wait so long. That theory we are following out in most cases, increasing the number of cars and decreasing the headway, so that we cover the ground rapidly, and in some cases we have increased the schedule to a greater speed also, where traffic would warrant it. So that the people are getting better service. And in every case where we have tried it out that I know of, the people along the route are fully satisfied with the results.

The objection usually made to one-man cars is that they are dangerous, but recent improvements have robbed this objection of its force. Both of the cars now offered for approval by the Bay State company have safety features which are not found on

its regular equipment and which are described in a report made by the inspection department of the Commission as follows: —

There are two doors, one on the right side of each end and each car is arranged for prepayment service. The controller handle is of the "dead man" type, arranged so that if the pressure of the hand on it is released at any time, when the air brakes are not set, certain emergency features will be put into operation. The cars are equipped with combination straight air and automatic emergency brakes and also with hand brakes. The emergency features, which are set in operation by releasing pressure on the "dead man" handle, consist of arrangements for throwing off the power, applying sand to the rail, setting the automatic air brakes, opening the forward door and unlocking the rear one. These emergency features are controlled and operated by air and are not dependent upon the presence of power, and can be effected whether the car is moving or standing. In case of failure in the air apparatus, the hand brake can be used and the doors opened and closed by hand, but of course in this case the safety features would be absent. The operator's brake valve controls the service and emergency brake operations, the door movements and also the service application of sand to the rail.

These safety features are operated on much the same principle as the ordinary automatic air brake apparatus, and have no greater delicacy of mechanism. When it is considered that practically all automobiles, including ponderous motor trucks, are one-man operated cars, the comparative safety of electric cars equipped with these devices is evident. It is reported that similar cars in use in other parts of the country have so far proved in actual practice safer, if anything, than the cars operated by two men. This seems to be due chiefly to the fact that all passengers board and alight directly under the eye of the motorman-conductor.

One of the Bay State one-man cars is entirely new. It is a steel car of strong but light construction, weighing but 15,440 pounds. The wheels are small (24 inches) and the wheel base is long (8 feet), so that it has better riding qualities than the ordinary single-truck car. It seats 29, and the seats are of the modern cross type, upholstered in cane. The other car is not new, but it has been reconstructed for one-man operation. It is built of wood and is considerably heavier than the steel car, weighing 21,540 pounds. The wheels are large (33 inches) and the wheel base comparatively short (6 feet, 6 inches). While it will seat the same number as the new car, the seats are of the old-fashioned side-bench type.

The Commission has every reason to believe that the public served by the Bay State company desires a thorough trial of one-man car operation. In the brief filed in the rate case last year "on behalf of each city and town served by the Bay State Street Railway Company, except the city of Boston, and also in behalf of such civic and commercial organizations as have appeared and entered protest," one of the suggestions offered to the company was that it "follow the further suggestion of Mr. Witt and put in service one-man operated cars on all lines where their use will decrease the operating expenses and afford the traveling public as good service as the patronage justifies." At the hearings the employees of the company opposed the introduction of the new cars, but in the opinion of the Commission this attitude is contrary to their own best interests. The Bay State company has a number of country lines with very low earnings, which are in serious danger of being abandoned unless expense can be decreased, and it also has short-haul lines of the type already mentioned where it ought to be possible to increase both service and patronage by the use of one-man cars, and to meet jitney competition to much better advantage. The company has recognized the principle that a higher rate of wages ought to be paid the man who combines the functions of motor-man and conductor, and if these cars will accomplish the results anticipated, they will improve a situation which is as threatening to the employees as it is to the company itself.

Objections to the operation of one-man cars which are not now foreseen, may develop in practice, and the Commission must, of course, reserve the right to deal without prejudice with any situation which may arise in the future. It has no hesitation, however, in expressing its present opinion, — an opinion which is based upon the advice of competent experts in street railway operation and upon knowledge of experience in other parts of the country, — that properly designed one-man cars can be used in many cases with distinct public advantage. They are not adapted to lines of heavy traffic, and there are lines of light traffic where special conditions may render their use inadvisable, but on certain routes of most systems they can be employed with safety for the purpose of furnishing better service to the public at less expense to the company.

In its petition the company seeks, in the first place, approval of the design of two cars already secured, and, in the second place, permission to operate these cars, and to secure and operate cars

of a general and similar design, over 15 specified routes. The Commission is prepared to approve the new car, numbered 7000, and to permit the company to secure additional cars of similar design. The case of the reconstructed car, numbered 7500, is not so clear. While there may be economy in initial investment in the adaptation of existing cars for one-man operation, this is offset by loss in operating efficiency. The reconstructed car will certainly consume materially more power than the new car, and it is very likely to attract less traffic. While the Commission is willing to approve this car for experimental use, it is not willing to approve the reconstruction of additional cars of similar design until evidence is available as to the comparative efficiency of the two types in actual operation.

The routes specified in the petition are all short routes with light traffic. The longest is about $4\frac{1}{2}$ miles long and the shortest is less than half a mile in length. In the opinion of the Commission, although other equipment may be necessary in certain cases for extra trips or to care for summer traffic, these routes are in general well suited to the operation of one-man cars and the desired approval will be given. The company has failed in its petition, however, to give proper recognition to what is, as we have already shown, perhaps the most important advantage of this new type of equipment, — namely, the opportunity offered to improve service and attract traffic. On none of the routes specified does the company propose to use the new cars in this way; in each case they are to be used merely as a means of decreasing operating expense. The seriousness of this omission may be gauged by the following extract from a leading editorial in the *Electric Railway Journal* of September 22, 1917: —

During the past year there has sounded for the electric railways of the country *no clearer message* than that of the necessity for *frequent service*. Here appears a means for stimulating revenue that seems now to have definitely established itself as practical in its working, and in several communities of moderate size, where prospective short-haul passengers prefer to walk rather than to wait for a car, the change from long to short headway has spelled no less than the difference between bankruptcy and prosperity. *An increase of one-third in service has actually produced 60 per cent greater revenue.*

To speak broadly, the new movement for shorter headways, which applies practically to every community of moderate size throughout the entire country, and even to certain districts of large cities, has been brought about through the development of the one-man car with automatic equip-

ment. *This, at the present time, offers a peculiarly ready means for establishing the desired traffic conditions.* Its first cost, even with the greatest elaboration in regard to the latest improvements, is surprisingly small, — so low, in fact, that the investment may frequently be written off out of the increased earnings of four or five years. Its economy is positive, not only because platform labor is reduced, but generally because its introduction means the substitution of modern and efficient equipment in place of obsolete apparatus and permits improved conditions of operation in place of those imposed by old-style, open-platform, high-step, badly-designed car bodies that need only half an excuse to be scrapped. In consequence, we are devoting the major part of this issue to discussions of the one-man car and its equipment with the aim that attention may thus be drawn to the *almost untapped source of revenue that exists in short-haul traffic obtained through short headways.* [Italics ours.]

The management has informed the Commission that it intends to put one-man cars to the use so strongly emphasized in this journal of the trade; but this intention ought to be made unmistakably clear to the public, and ought to be carried into practice at the earliest possible moment. If the two cars now in the possession of the company can be used on some short city line to increase a 30-minute to a 15-minute headway or, better still, a 20-minute to a 10-minute headway, they ought to be put to such use at once, and to facilitate such action the order entered below, approving certain routes for one-man operation, has been so drawn that it may readily be extended from time to time to include additional routes. If, however, a satisfactory application of the theory of increasing service cannot be obtained with two cars only, the company ought to use its best endeavors to secure a sufficient number of cars for this purpose at an early date and in the meantime inform the public fully as to the plans which it intends to carry into effect.

ORDER.

Petition of the Bay State Street Railway Company for approval of design of one-man cars and for permission to operate such cars over certain routes of its railway.

After notice and hearing and full consideration, —

It is

Ordered, That the approval of the Commission be hereby given to the operation by the Bay State Street Railway Company of the one-man cars now owned by said company and numbered, respectively, 7000 and 7500, and to the purchase and operation

of additional cars of the same type as the car numbered 7000, over the following routes: —

Park avenue, Revere,
Ocean avenue, Revere,
Willows, Salem,
Beverly-Danvers via Bridge street,
North Reading,
Arlington street, Haverhill,
Squantum, Quincy,
South Braintree-Randolph,
Fort Point, Weymouth,
East Weymouth-South Weymouth,
Oakdale, Dedham,
Hyde Park-Mattapan,
East Milton-Milton Lower Mills,
School street, Taunton,
Taunton depot,

and over such further routes as the Commission may from time to time by order approve: *provided, however*, that the Bay State Street Railway Company, in the operation of said one-man cars, shall adopt the following rules: —

(1) When a car is running the operator shall transact no business relative to the collection of fares or the issue of transfers.

(2) If the operator has occasion to leave his car he shall remove and retain in his possession the reverse handle of the controller.

By the Commission,

ANDREW A. HIGHLANDS,

OCTOBER 3, 1917.

[P. S. C. 1849]

Secretary.

Petition of the Brockton and Plymouth Street Railway Company for approval of type of one-man car and for permission to operate same over its railway.

Petition of the Boston Elevated Railway Company for approval of type of one-man car to be operated on its railway between Maverick square and North Ferry in the East Boston district of the city of Boston.

These petitions are similar and for convenience have been considered together. The Boston Elevated Railway Company wishes to buy a single car of the one-man operated type and to use it

on the short line of very light traffic which runs between Maverick square and North Ferry in the East Boston district. The Brockton and Plymouth wishes to buy two cars of the same type and to operate them on its railway in the towns of Plymouth and Kingston. Traffic on its entire line is light except at times during the summer season.

Permission to operate one-man cars has in the past been refused by this Commission and by its predecessor, the Board of Railroad Commissioners. The last case of this kind was in 1915 when the petition of the Milford, Attleborough and Woonsocket Street Railway Company "for authority to operate an electric car on its line between Bellingham Four Corners and Careyville in charge of one man" was dismissed (3d Rep. P. S. C., p. 379). In its opinion the Commission cited, with approval, a decision of the Board of Railroad Commissioners on December 3, 1903, when it refused to authorize the Boston and Northern Street Railway Company to operate such a car over its North Reading branch and when it said: —

It would be unwise, in our judgment, to establish a precedent for entrusting the car operated by electricity to the sole custody of one man and we must therefore recommend that the company employ a conductor as well as a motorman on this branch.

The question was also raised by various remonstrants in the recent "Bay State Rate Case," decided August 31, 1916, who strongly urged the use of one-man cars as a means of saving expense and also improving service. In its decision in this case the Commission made the following statement in regard to this matter: —

The experts also urged a limited use of one-man operated cars. To quote Mr. Arnold (Exhibit 62, p. 55): —

At present a large number of lines are being operated with the longest practicable headway to provide any reasonable service, and yet the revenue is not sufficient to result in profitable operation. In such cases, particularly for short lines in suburban territory, the use of the one-man car is recommended, at least during the greater part of the day.

He estimated a saving from this source of from \$25,000 to \$39,000 a year. Mr. Witt went much further and advised a certain use of such cars on lines even of heavy traffic, as a means of meeting jitney and motor bus competition. By using them he argued that far more frequent service could be furnished without increased expense. The company takes a position midway between the two, believing that one-man cars can be used to

advantage on more routes than Mr. Arnold apparently thinks probable, but not to the extent which Mr. Witt advocates. (Record, pp. 4880-4882). The company, it should also be stated, cannot be held responsible for any failure to use such cars up to the present time, for it has been prevented from doing so by decisions of this Commission and of its predecessor, the Board of Railroad Commissioners, decisions based on the alleged danger involved in their operation. It is possible that this danger may have been exaggerated and that it has been minimized by recent improvements in type of car and method of control. At all events, the Commission is quite willing, upon application, to take this matter up again without prejudice and give it renewed consideration.

Undoubtedly the issue which is now presented differs essentially from the issue which was before the Railroad Commission in 1903, and again before this Commission in 1915. It was then proposed to employ in one-man operation a car very similar in type to the ordinary car which is in charge of two men, using the front entrance only and introducing some form of prepayment device. In the present instance the car which both the Boston Elevated and the Brockton and Plymouth companies wish to use has been specially designed for one-man operation and has safety devices of new and unusual character. Provision is made, for example, so that if the motorman, while the car is in operation, should for any cause remove his hand from the controller handle, power is automatically shut off, brakes are applied, the track is sanded, the front door is thrown open and the rear door unlocked. In point of comfort, also, the car is superior to the ordinary single truck car, for it is equipped with cross seats and will seat from 28 to 30 passengers.

The plans for this proposed new type of car have been given very careful consideration by the inspection department of the Commission and the chief of that department, Mr. Bishop, is of the opinion, upon present information, that they can be operated without endangering the safety of the public and that their use, for an experimental period of time at least, may reasonably be permitted by the Commission. To what extent such cars are capable of providing adequate accommodation for the traveling public is another matter and can only be determined in actual practice. Favorable reports, however, have been received from other parts of the country where they are now in service. In the opinion of the Commission it will probably be necessary to confine their use to lines of light traffic, such as the lines involved in the present petitions. So far as such cars enable the com-

panies to operate with greater economy, they are, under present conditions and, indeed, under any conditions, clearly in the general public interest and even, we believe, in the interest, in the long run, of the employees of the companies.

Upon consideration of all the circumstances of these two cases, therefore, the Commission believes that the authority sought in the petitions should be granted, upon the understanding, however, that this authority may at any time in the future be withdrawn if the operation of the cars in actual practice proves in any important respect dangerous to public safety, or if it proves that they are unable to furnish reasonable and adequate accommodations for the traveling public. Orders to this effect are entered below.

ORDERS.

Petition of the Brockton and Plymouth Street Railway Company for approval of type of one-man car and for permission to operate same over its railway.

After notice and hearing and full consideration, —

It is

Ordered, That the approval of the Commission be hereby given to type of one-man cars to be purchased by the Brockton and Plymouth Street Railway Company, as shown in photographs attached to the petition marked "Exhibit A," and to the operation of cars of this type over its railway.

Petition of the Boston Elevated Railway Company for approval of type of one-man car to be operated on its railway between Maverick square and North Ferry in the East Boston district of the city of Boston.

After notice and hearing and full consideration, —

It is

Ordered, That the approval of the Commission be hereby given to type of one-man car to be purchased by the Boston Elevated Railway Company, as shown in reprint cuts and diagrams on file with the petition, and to the operation of a car of this type on its railway between Maverick square and North Ferry in the East Boston district of Boston.

By the Commission,

ANDREW A. HIGHLANDS,

MARCH 28, 1917.

[P. S. C. 1704; 1705]

Secretary.

Petition of the Concord, Maynard and Hudson Street Railway Company for approval of type and use of one-man car.

After notice and hearing and full consideration, —

It is

Ordered, That the approval of the Commission be hereby given to the type of one-man car to be purchased by the Concord, Maynard and Hudson Street Railway Company, as shown by photographs and blue prints, numbered D-33593, F-33653, F-33130, E-33660, D-33656, D-33095 and D-33590, on file in this office, and to the operation of car of this type upon the Acton branch, so-called, of its railway, subject to the following rules: —

(a) When the car is running the operator shall transact no business relative to the collection of fares or the issue of transfers.

(b) If the operator has occasion to leave his car, he shall remove and retain in his possession the reverse handle of the controller.

Attest: ANDREW A. HIGHLANDS,

AUGUST 6, 1917. [P. S. C. 1707]

Secretary.

During the year orders approving types of cars have been issued, as follows: —

Boston Elevated railway, January 19, 1917,— thirty-five steel passenger cars for its Cambridge subway and Dorchester tunnel service, as shown on plans numbered, respectively, 0600-0639 and 0640-0659, each dated January 18, 1917. [P. S. C. 1584-A]

Worcester and Warren street railway, July 13, 1917. [P. S. C. 1828]; Nov. 19, 1917. [P. S. C. 1938] (one-man cars).

EXTENSION OF TIME FOR CHANGING CAR STEPS.

In accordance with an order of the Commission, dated July 20, 1914, P. S. C. 576, good cause having been shown, the Commission issued orders extending the time in which to complete the work of changing car steps on street railway cars, as follows: —

Blue Hill street railway, April 13, 1917,— time extended to July 1, 1918. [P. S. C. 831]

Boston Elevated railway, March 16, 1917,— time extended to July 1, 1918. [P. S. C. 831]

Bristol County street railway, receivers of, April 30, 1917,— time extended to July 1, 1918. [P. S. C. 831]

Brockton and Plymouth street railway, April 13, 1917,— time extended to July 1, 1918. [P. S. C. 831]

Interstate Consolidated street railway, April 13, 1917,— time extended to July 1, 1918. [P. S. C. 831]

CAR HEATING.

Petition of the New York, New Haven and Hartford Railroad Company for exemption from the law in relation to heating cars by steam.

After consideration, —

It is

Ordered, That the New York, New Haven and Hartford Railroad Company be hereby exempted until the first day of October, 1918, from the law requiring passenger cars to be heated by steam from the locomotive in respect to cars on certain mixed trains on the Boston, Highland, New Haven, New London, Midland, and Old Colony divisions of its railroad, specified in the petition, in which freight cars are placed between the locomotive and passenger cars; also on trains 900 and 901 of the Central New England railway between Springfield and Tariffville; all of said cars to be heated by the Baker heater heretofore approved by the Board of Railroad Commissioners.

Attest: ANDREW A. HIGHLANDS,
OCTOBER 4, 1917. [P. S. C. 1917] Secretary.

CIRCULAR TO OPERATING STREET RAILWAY COMPANIES.

Modification of Regulations for the Heating of Street Railway Cars.

In compliance with the provisions of section 91 of Part III of chapter 463 of the Acts of 1906, the Board of Railroad Commissioners on April 2, 1907, issued an order which provides that every street railway company shall, during the period between the fifteenth day of October and the fifteenth day of April in each year, "whenever the outside temperature is less than forty degrees above zero (Fahrenheit) maintain, in all box cars in use for transporting passengers, an inside temperature, as nearly as may be, of not less than forty nor more than sixty degrees above zero, except at times when the company is temporarily prevented from so doing by storm, accident or other controlling emergency for which it is not responsible, and which is not due to any negligence upon its part."

For the purpose of conserving the fuel supply in the present emergency, and at the request of the Fuel Administrator for New England, —

It is

Ordered, That so much of the order of the Board of Railroad Commissioners above referred to as requires the heating of street railway cars during the period from October 15 to October 31 be suspended for the current year, and that during the month of November, 1917, every street railway company be required to heat its cars only when, for such length of time and to such extent as may seem necessary.

By the Commission,

FREDERICK J. MACLEOD,

OCTOBER 13, 1917.

[P. S. C. 1549-I]

Chairman.

Modification of Regulations for the Heating of Street Railway Cars.

For the purpose of conserving the fuel supply in the present emergency and at the further request of the Fuel Administrator for New England, the order of this Commission dated October 13, 1917, is modified so as to read as follows: —

Ordered, That during the period between the date of this order and the fifteenth day of April, 1918, unless otherwise ordered, every street railway company be required to heat its cars only when, for such length of time and to such extent as may seem necessary.

By the Commission,

ANDREW A. HIGHLANDS,

NOVEMBER 30, 1917.

[P. S. C. 1549-I]

Secretary.

CROSSINGS, RAILROAD OR RAILWAY.

RAILROAD AND RAILWAY CROSSINGS.

Petition of the Boston and Maine Railroad for authority to construct additional track at grade, across the tracks of the Bay State Street Railway Company in Main street in the town of Chelmsford.

The Stony Brook branch of the Boston and Maine railroad now crosses at grade the highway known as Main street in the town of Chelmsford with a single track, and the company desires to lay another track over this crossing within the limits of the location of the branch, south of the existing track and parallel therewith. The Bay State Street Railway Company also has a double track railway in said Main street, crossing the present steam railroad track at grade. Because of the presence of these railway tracks, the consent of the Commission to the laying of an additional railroad track at the crossing is required under the provisions of section 21, part I, chapter 463 of the Acts of 1906.

There are also two side tracks on either side of this crossing. The one on the southwesterly side is being extended to West Chelmsford, a distance of about 3 miles, so that, with the construction of the proposed additional track at the crossing, these two sidings will be connected and trains from Ayer will be able to proceed over the siding from West Chelmsford to North Chelmsford without interference with trains on the main track. This will not only facilitate the operation of trains between these two points but will conduce to better and more efficient operation in general on this branch of the Boston and Maine railroad. The crossing is now protected by a flagman throughout the entire twenty-four hour period and no more trains will be operated over the crossing by reason of the construction of the new track.

After full consideration of the facts in the case, the Commission is of the opinion that public necessity and convenience require the construction of this additional track across the tracks of the Bay State street railway. It is, therefore,

Ordered, That the consent of the Commission be hereby given to the construction and maintenance of an additional track by

the petitioner, within its location, across the tracks of the Bay State Street Railway Company in Main street in the town of Chelmsford, and at the same level therewith, substantially as shown on the plan filed with the petition and entitled "Boston and Maine Railroad, Southern Division, Stony Brook Branch, Valuation Section No. 16, Second Track, West Chelmsford to North Chelmsford", signed by A. B. Corthell, Chief Engineer, subject to the following conditions and regulations:

1. The crossing shall be constructed and maintained by and at the cost of the Boston and Maine Railroad, in a manner satisfactory to the Bay State Street Railway Company, or if the parties do not agree in regard thereto, in such manner as shall be prescribed by the Commission.

2. Each street railway car when approaching the crossing shall be stopped within 100 feet therefrom. The conductor shall proceed to a point upon the railroad from which the best view of approaching trains can be obtained, and shall from such point direct the movement of the car, remaining there until the car shall have passed across the tracks. No car shall cross or attempt to cross the railroad tracks except when and as such conductor shall direct nor while another car is crossing or attempting to cross in the opposite direction.

3. No curtailment in protection from that afforded at the crossing at the present time shall be made without the consent of the Commission.

4. The foregoing conditions, limitations and regulations shall be, from time to time, subject to revocation or modification.

By the Commission,

ANDREW A. HIGHLANDS,

NOVEMBER 2, 1917. [P. S. C. 1838] *Secretary.*

Petition of the Bay State Street Railway Company for authority to discontinue the services of special crossing tenders at Wilmington crossing, Boston and Maine railroad, Main street; Winchester crossing, Boston and Maine railroad, at junction of Church, Pleasant and Main streets; East Bridgewater crossing, New York, New Haven and Hartford railroad at Central street, and for modification of previous orders in respect thereto.

At the public hearing on this petition, it appeared that the Bay State Street Railway Company maintains special crossing tenders at the crossings named above, in addition to the flagmen furnished by the steam railroad companies.

Wilmington. — The Main street crossing at Wilmington is on a relatively unimportant branch line of the Boston and Maine

railroad, that leaves the main line at Wilmington station. There is one train a day, each way, over this crossing, running through to Lawrence and Lowell and ten trains that pass over the crossing in going to and from the yard on the northwesterly side of the Wilmington station, with an occasional extra. The movements over the crossing are at slow speed, and the view from the crossing in either direction is good. The crossing is protected by a flagman furnished by the railroad company between the hours of 6 A.M. and 7 P.M.

East Bridgewater. — The Central street crossing on the branch of the New York, New Haven and Hartford railroad at East Bridgewater is also protected by a flagman furnished by the railroad company, between the hours of 6.25 A.M. and 7.23 P.M. and there are but eleven passenger and three freight trains moving over it daily. The station is located at the crossing and all passenger trains make the station stop, so that the speed over the crossing is slow. The view on the railroad tracks in both directions is good.

In view of the amount and character of the traffic at the East Bridgewater and Wilmington crossings, together with the other conditions at these points, the Commission is disposed to grant the request of the petitioners under the following conditions and requirements: That the company install a wire trolley guard over the tracks at each of these crossings and require that each car come to a stop within 100 feet of the railroad track, the conductor of the car to go forward to a point upon the railroad track and carefully ascertain whether any engine, train or car is approaching on the railroad or is within sight or sound of the crossing. The railway car shall not start to cross the railroad track until the conductor so directs, and he shall remain upon the railroad until the car has reached and crossed over the tracks.

Winchester. — The crossing of the Boston and Maine railroad at the junction of Church, Pleasant and Main streets in Winchester is in the business district of the town. A great many trains use this crossing daily and there is also a large amount of vehicular and other traffic. In view of the conditions that exist at this point, the Commission is not disposed to modify the restrictions or regulations at this crossing.

By the Commission,

ANDREW A. HIGHLANDS,

APRIL 10, 1917. [P. S. C. 1683]

Secretary.

Petition of the Worcester Consolidated Street Railway Company for consent to the construction of an additional track in West Boylston street, across the tracks of the Boston and Maine railroad at grade, in the city of Worcester.

A public hearing was given on this petition on February 5, 1917, and at a later date a conference was held with the parties in interest.

The Worcester Consolidated street railway crosses the tracks of the Worcester, Nashua and Portland division of the Boston and Maine railroad, in West Boylston street, in the city of Worcester, by a single track constructed at grade. The company now has a double track in the street on each side of the railroad and in order to obviate the delays occasioned to the increased traffic over this line by reason of the existing single track crossing, it desires to extend the double track across the railroad tracks at the same level therewith. A location for the extension of this second track, granted by the board of aldermen of the city of Worcester on September 6, 1916, was approved by the Commission on October 24, 1916. The crossing in question is protected by a gateman during the twenty-four hours of the day, and as no additional cars will be operated over it by reason of the construction of the proposed new track, and it appearing that the convenience of the public will be better served thereby, the Commission consents to the construction and maintenance of an additional street railway track at grade across the tracks of the railroad at this point.

It is, therefore,

Ordered, That the consent of the Commission be hereby given to the construction and maintenance by the petitioner of an additional street railway track across the tracks of the Worcester, Nashua and Portland division of the Boston and Maine railroad at West Boylston street, in the city of Worcester, at the same grade therewith, as shown in red on a plan on file with the petition, subject to the following conditions and regulations:—

1. The crossing shall be constructed and maintained by and at the cost of the street railway company, in a manner satisfactory to the railroad company or, if the parties do not agree in regard thereto, in such manner as shall be prescribed by the Commission.

2. Each car upon approaching the crossing shall be stopped within one hundred feet therefrom. The conductor shall proceed to a point upon the railroad premises from which the best view of approaching trains can be obtained, and shall from such point direct the movement of the car, re-

maining there until the car shall have passed across the railroad tracks. No car shall cross or attempt to cross the railroad tracks except when and as such conductor shall direct, nor while another car is crossing or attempting to cross in the opposite direction.

3. No curtailment in protection from that afforded at the crossing at the present time shall be made without the consent of the Commission, and the street railway company shall, from time to time, provide and maintain such further safeguards at this crossing as the Commission may deem necessary.

4. The foregoing conditions, limitations and regulations shall be, from time to time, subject to revocation and modification.

By the Commission,

ANDREW A. HIGHLANDS,

MARCH 16, 1917. [P. S. C. 1632]

Secretary.

Petition of the Boston and Worcester Street Railway Company for consent to change in method of crossing protection at Framingham.

After consideration, —

It is

Ordered, That the order of the Commission issued under date of November 23, 1915, authorizing the Boston and Worcester Street Railway Company to maintain and use a crossing at grade of its railway and the tracks of the New York, New Haven and Hartford Railroad Company at Worcester street in the town of Framingham until June 1, 1917, subject, among other conditions, to certain conditions embodied in an order of the Board of Railroad Commissioners issued on the petition of the Framingham, Southborough and Marlborough Street Railway Company under date of February 28, 1899, consenting to said crossing, be hereby modified to the extent of permitting the Boston and Worcester Street Railway Company to discontinue the services of its special flagman at said crossing; on the condition that protection shall be furnished thereat by gates and gatemen during the entire twenty-four hour period of each day, as provided in an agreement between the Boston and Worcester Street Railway Company and the New York, New Haven and Hartford Railroad Company, a copy of which is on file with the petition.

Attest: ANDREW A. HIGHLANDS,

JANUARY 5, 1917. [P. S. C. 1176]

Secretary.

Petition of the Boston and Worcester Street Railway Company for authority to maintain and use an existing grade crossing, heretofore authorized, of railroad and railway in Framingham.

After notice and hearing, — it is

Ordered, That the petitioner be authorized to maintain and use a crossing at grade of its railway and the tracks of the New York, New Haven and Hartford railroad at Worcester street in the town of Framingham, from the date of this order until January 1, 1919, subject to all provisions of law and to the conditions embodied in the order of the Board of Railroad Commissioners issued on the petition of the Framingham, Southborough and Marlborough Street Railway Company under date of February 28, 1899, as modified by an order of this Commission dated January 5, 1917, and to the further condition that any substantial increase in the use of the crossing by the railway or railroad shall be seasonably reported by the petitioner to this Commission.

Attest: ANDREW A. HIGHLANDS,
JUNE 29, 1917. [P. S. C. 1774] *Secretary.*

Under the provisions of sections 21 and 22 of part I, chapter 463, Acts of 1906, during the period covered by this report, additional orders have been issued extending the time for maintenance of crossings of railroads and railways. Appended is a list of these orders:

West End Street Railway.

Arlington, October 31, 1917 — At Massachusetts avenue, with the Boston and Maine railroad, until December 1, 1919. Original order issued April 13, 1900. [P. S. C. 1934]

Boston, October 31, 1917 — At Neponset avenue, Dorchester, with the New York, New Haven and Hartford railroad, until December 1, 1919. Original order issued November 5, 1903 and amended July 7, 1904. [P. S. C. 1934]

Somerville, October 31, 1917 — At Davis square, with the Boston and Maine railroad, until December 1, 1919. Original order issued April 13, 1900. [P. S. C. 1934]

Watertown, October 31, 1917 — At Arsenal street, with the tracks of the United States Government, until December 1, 1919. Original order issued April 20, 1900. [P. S. C. 1934]

PRIVATE RAILROADS.

Petition of the Boston Development and Sanitary Company for authority to cross the location of the East Boston branch of the Boston and Maine railroad in East Boston.

It appearing that the Boston Development and Sanitary Company, being a private unchartered railroad, has petitioned for authority to construct and maintain a railroad track across the East Boston branch of the Boston and Maine railroad in East Boston, for the purpose of filling in and grading land at East Boston for the disposal of refuse from the city of Boston; that due notice of said petition has been given to all parties interested and a public hearing held in pursuance therewith, and that all parties in interest consent thereto; that an agreement has been executed between the Boston Development and Sanitary Company and the Boston and Maine Railroad relative to the expense of construction, protection, maintenance, operation, repairs and renewal of such crossing, —

It is

Ordered, That the consent of the Commission be hereby given to the construction and maintenance by the petitioner until the sixth day of March, 1922, of a railroad for private use in the transportation of freight to be operated by steam power across the location of the East Boston branch of the Boston and Maine railroad, at the same level therewith, as shown on plan on file with this Commission entitled: "Plan showing location of Proposed Double Grade Crossing over Boston and Maine R.R. — East Boston Branch. Boston Development and Sanitary Co., 1139 Old South Building, Boston, Mass. H. W. R. Scale 40' = 1 inch Nov. 16, 1916." Said crossing is to be protected by an interlocking system to be established and maintained under the provisions of the general law and in accordance with said plan and to be operated in accordance with the general and special rules and regulations of the Boston and Maine Railroad as from time to time made.

It is

Further ordered, That the approval of the Commission be hereby given to the above named agreement, a copy of which is on file in this office.

Attest: ANDREW A. HIGHLANDS,
MARCH 26, 1917. [P. S. C. 1552] Secretary.

Petition of Mary T. Carney and Edmund Reardon for consent to the construction and maintenance of railroad for private use across a highway in the city of Cambridge.

It appearing that the City Council of the city of Cambridge has consented to the construction of the proposed railroad across the highway; that the county commissioners of Middlesex County have adjudged that public necessity requires that the railroad cross the highway at a level therewith, and that the same is consistent with the public interests, —

It is

Ordered, That the consent of the Commission be hereby given to the construction and maintenance by the petitioners of a railroad for private use in the transportation of freight, to be operated by steam power upon and across the highway known as Waverley street in the city of Cambridge, as shown upon a plan on file with the petition.

This consent is given upon the condition that a flagman shall display a flag by day and a lantern by night whenever an engine, car or train is approaching and while it is passing over said crossing, and that no engine, car or train shall cross at a greater speed than four miles an hour.

Attest: ANDREW A. HIGHLANDS,

MAY 11, 1917. [P. S. C. 1709]

Secretary.

During the year additional orders have been issued consenting to the construction of railroads for private use in the transportation of freight across highways, as follows: —

Boston, October 16, 1917 — American Sugar Refining Company, across Granite street, South Boston. [P. S. C. 1904]

Boston, June 6, 1917 — Summer Street Extension Trust, across Fargo street, South Boston. [P. S. C. 1764]

Boston, November 24, 1917 — S. A. Woods Machine Company, across Alger street, Dorchester avenue and Damrell street, in the South Boston district. [P. S. C. 1940]

Cambridge, December 5, 1917 — Worthington Pump and Machinery Company, across Munroe street, at its junction with Fifth street. [P. S. C. 1988]

Marlborough, August 24, 1917 — Howe Lumber Company, across Florence street. [P. S. C. 1797]

New Bedford, March 13, 1917 — New Bedford Gas and Edison Light Company, across Coffin street. [P. S. C. 1687]

New Bedford, June 6, 1917 — William G. Welsh, across Front street. [P. S. C. 1766]

North Andover, February 20, 1917 — M. T. Stevens and Sons Company, across Stevens street. [P. S. C. 1673]

SAFEGUARDS AT CROSSINGS.

Petition of the mayor of the city of Beverly relative to the installation of annunciator bells in place of electric crossing bells at certain grade crossings of the Boston and Maine railroad in that city.

Cabot street, in the city of Beverly, crosses at grade the main line and the Gloucester branch of the Portland division of the Boston and Maine railroad at two crossings known as the Kittredge and Gloucester crossings. These crossings are now protected by gates and also by electric crossing bells. The bells were installed by order of the board of railroad commissioners under date of August 9, 1910, upon petition of the mayor of Beverly for additional safeguards at certain crossings in that city. The petitioner now asks to have these electric crossing bells removed and annunciator bells placed in the gateman's shanty to warn the gateman of approaching trains. This change is desired because the neighborhoods in the vicinity of these crossings have become thickly settled, and the ringing of the bells is so frequent and long continued, especially when an engine or train is standing within the circuit, that it causes serious annoyance to the residents, and is of little value as a warning to highway travel. The representatives of the company at the hearing expressed their willingness to make the changes requested if the order of the board of railroad commissioners above referred to should be so amended as to permit the company to do so.

Grade crossing protection by both crossing bells and gates is unusual, as it is only in exceptional cases that the Commission has required the installation of crossing bells where protection is provided by gates or a flagman at all hours. In view of the conditions disclosed in the present case, the Commission is of the opinion that so much of the order of the board of railroad commissioners as requires electric crossing bells in addition to gates at these two crossings should be revoked. In view of the experience of our inspection department, the use of annunciator

bells is also of doubtful value, because of the possibility of their getting out of working order and thereby giving the gateman a false sense of security. The Commission will therefore not require the installation of any bells at these crossings, but if the company deems the use of annunciator bells desirable it has the power to install them.

It is therefore

Ordered, That so much of the order of the board of railroad commissioners under date of August 9, 1910, as requires the use of electric bells at Kittredge and Gloucester crossings on the Boston and Maine railroad in Beverly be hereby revoked.

By the Commission,

ANDREW A. HIGHLANDS,

DECEMBER 31, 1917. [P. S. C. 1867] *Secretary.*

Petition of Mayor and City Solicitor of Malden relative to protection at the crossing of Bellvale and Clapp streets with the Saugus branch of the Boston and Maine railroad in the city of Malden.

A hearing on this petition was held January 3, 1917. Bellvale and Clapp streets are laid out and accepted city streets on both sides of the location of the Saugus branch of the Boston and Maine railroad in the city of Malden. The private crossings in question over the tracks of the railroad are included within the side lines of these streets extended across the railroad. These crossings were created by a reservation in the deed of the original grantor to the railroad, in which he reserved for himself, his heirs and assigns, the right to cross the tracks of this company at grade.

Since the original lay-out, this section of the city has so developed that the land on either side of the railroad is laid out with streets and is extensively built upon. The crossings over the tracks are used by the general public. Counts submitted by the company taken on December 28, 1916, and January 2, 1917, showed an average of 327 pedestrians and 20 vehicles crossing at Clapp street, and 717 pedestrians and 42 vehicles crossing at Bellvale street each day. While, undoubtedly, many of those who use these crossings have no legal right to do so, as a practical matter it is impossible to distinguish between those who have and those who have not such right. The traffic on the railroad consists of sixteen trains per day, each way, between the hours of 6.00 A.M. and 11.57 P.M.

In view of these conditions the Commission is of the opinion that electrically operated signal bells should be installed and maintained at these crossings, and it is, therefore,

Ordered, That the Boston and Maine Railroad install and maintain electrically operated signal or warning bells at the travelled places known as Bellvale and Clapp streets on the Saugus branch of its railroad in the city of Malden.

Attest: ANDREW A. HIGHLANDS,
FEBRUARY 27, 1917. [P. S. C. 1338] Secretary.

Petition of the Selectmen of Sudbury for establishment of gates at the grade crossing of the state highway and the New York, New Haven and Hartford railroad in that town.

This is a petition of the selectmen of Sudbury for the installation of gates at the grade crossing of the state highway and the New York, New Haven and Hartford railroad in that town, to which has been added the endorsement of the Massachusetts Highway Commission. A public hearing on the matter was held July 5, 1917.

The highway on which the crossing in question is located is one of the main arteries of travel between Boston and Worcester. An extremely heavy traffic is consequently carried over it, sufficient protection for which is not, in the opinion of the Commission, afforded by the warning bells now in use. The Commission will, therefore, require the company to provide and maintain gates at this crossing, and, during the period pending the installation thereof, protect the same by a flagman who shall be stationed thereat.

The Commission believes, also, that conditions affecting the view of the crossing at night would be considerably improved if an arc light were placed at the crossing, and suggests to the town authorities that consideration be given the matter.

It is

Ordered, That the New York, New Haven and Hartford Railroad Company be hereby required to provide and maintain gates at the crossing of its railroad and the state highway in the town of Sudbury, during the passing of all trains over said crossing and that during the period pending the installation of said gates, protection shall be furnished by a flagman to be stationed thereat.

By the Commission,

 ANDREW A. HIGHLANDS,
JULY 14, 1917. [P. S. C. 1788] - Secretary.

Petition of the City Council of Woburn for the installation of alarm bells at all grade crossings on the Boston and Maine railroad in that city.

The Boston and Maine railroad crosses seventeen highways at grade within the limits of the city of Woburn. Of these crossings thirteen are located on the Woburn loop, so-called, while the remaining four are located on the Stoneham branch. Gates are maintained at all of the crossings on the Woburn loop and with the exception of the Andover street crossing, over which two passenger trains pass on week days after the protected period ends at 8.10 P.M., protection is afforded at each crossing during the time in which passenger trains are operated, the Main street crossing being protected during the entire twenty-four hours. The crossings on the Stoneham branch are protected by flagmen from 6.30 A.M. to 6.35 P.M., no service of any kind, except in emergency, being operated over this branch during the intervening hours.

An increasing highway traffic over the crossings on the Woburn loop has prompted the city council of Woburn to take action with a view to providing suitable safeguards thereat during the period when no protection is now furnished. The present petition, requesting the Commission to require the installation of warning-bells at all grade crossings on the Boston and Maine railroad in that city, has therefore been filed. The service on this line, following the regular passenger schedule for which protection is now afforded at all crossings with the exception of the Andover street crossing over which, as before stated, two passenger trains are operated after the protected period ends, is confined to an irregular and infrequent freight service, no protection therefor being provided except at the Main street crossing.

At the hearing it was stated by the company that rules had been issued requiring each train operating over the Woburn loop during the unprotected period to come to a stop and furnish its own protection before proceeding over each crossing, but it does not appear that such rules have been promulgated. The Commission is of the opinion that, under all the circumstances, the protection furnished by this method of safeguarding the crossings on this line and also on the Stoneham branch, whenever necessary, would be superior to that afforded by the installation of warning bells as proposed by the petitioners. The Commission also believes that the hours of gate protection at the Andover

street crossing should be extended so as to cover the operation of all passenger service.

It is, therefore,

Ordered, That all trains operated over the Woburn loop, so-called, and Stoneham branch on the Southern division of the Boston and Maine railroad, in the city of Woburn, during the period in which no protection at the crossings thereon is now provided, be required to stop before proceeding over any of said crossings, and, while passing thereover, be immediately preceded by a flagman displaying a flag by day and a lantern by night.

And it is

Further ordered, That the hours of gate protection now afforded at the Andover street crossing on said Woburn loop of the Boston and Maine railroad be extended so as to cover the operation of all passenger trains.

For the Commission,

ANDREW A. HIGHLANDS,

AUGUST 3, 1917. [P. S. C. 1767]

Secretary.

ABOLITION OF GRADE CROSSINGS.

Petition of inhabitants of Greenfield for certificate relative to abolition of grade crossing of Silver street and the Connecticut River railroad in that town.

After notice and hearing and an examination of the proposed plan for abolishing the grade crossing of the tracks of the Connecticut River railroad (Boston and Maine Railroad, lessee) and the highway known as Silver street in the town of Greenfield, as set forth in the report of the special commission appointed by the Superior Court to consider the matter, and after consideration of the expenditure therein authorized, —

It is

Ordered, That the Commission hereby certify that in its opinion the adoption of said plan and the incurring of such expenditure are consistent with the public interests, and are reasonably required to secure a fair distribution between the different cities, towns and railroads of the commonwealth of the public money appropriated for the abolition of grade crossings and that such expenditure will not, in its judgment, exceed the amount to be paid by the Commonwealth under the provisions of law relating thereto.

Attest:

CHARLES E. MANN,

JANUARY 26, 1917. [P. S. C. 766]

Executive Secretary.

Petition of the directors of the Boston and Albany Railroad Company for discontinuance of the crossing at grade of Everett street and the Boston and Albany railroad in Wellesley.

COMMONWEALTH OF MASSACHUSETTS.

SUPERIOR COURT.

NORFOLK, SS.

No. 9784 EQUITY.

DIRECTORS OF THE BOSTON AND ALBANY RAILROAD COMPANY,
PETITIONERS FOR THE DISCONTINUANCE OF EVERETT STREET
CROSSING, WELLESLEY.

Decision and Report of the Commissioners.

This is a petition of the directors of the Boston and Albany Railroad Company, filed in the Superior Court for the county of Norfolk, representing that public security and convenience require the discontinuance of the crossing of Everett street and the Boston and Albany railroad at grade in the town of Wellesley without the building of a new way in substitution therefor. In this case the members of the Public Service Commission were appointed as commissioners under the provisions of chapter 463, part I, section 29 *et sequitur*, of the Acts of 1906, and beg leave to submit the following report: —

After notice to all parties of record and by publication in the *Wellesley Townsman*, a newspaper published in said Wellesley, a public hearing was had at the rooms of the Public Service Commission in Boston on March 8, 1917. At this hearing Ralph A. Stewart appeared for the petitioners, and Henry Swenson and Roy H. Proctor, owners of real estate upon said Everett street, were heard in their own behalf.

Everett street crosses the main line of the Boston and Albany railroad just east of Wellesley station in that town. It is a public street up to the southerly line of the railroad location; north of the railroad location it is a private way and it was never laid out as a public street across the location.

The original Boston and Worcester railroad location was filed in 1835, at the time when the present town of Wellesley was a part of Needham. In 1846 the Boston and Worcester Railroad Corporation gave to Horace Blanchard, who owned a tract of land upon the northerly side of the railroad location, a deed of a right of way across the location at this point, and it has been without question a private right of way for the use of the owners of the Blanchard land from 1846 until the present location was filed by the Boston and Albany Railroad Company in 1888.

Planking was placed between the tracks and it was used by pedestrians for many years. It should be noted here that the Boston and Albany filed another location in October, 1883, which was identical with the original location filed by the Boston and Worcester railroad, the Western and Boston and Worcester railroads in the meantime having been consolidated as the Boston and Albany Railroad Company.

In 1888, the Boston and Albany Railroad Company as afore-said filed another location which took a strip of land extending along its original location about a mile in the town of Wellesley and including land upon both sides of Everett street. The purpose of this taking was to improve the alignment of its tracks and to secure better operating conditions. Coincident with the filing of this location an agreement was entered into between the railroad company and the Town of Wellesley that the grade crossings between what were then known as Linden and Blossom streets in Wellesley, a distance of about one mile, should be eliminated. These ways included two public crossings and four private crossings, of which Everett street was one. This agreement provided further for the laying out of three new streets, two of them, Linden and Kingsbury streets, to be carried across the railroad by overhead bridges, the railroad company to construct the bridges and abutments, to make no claim for land damages, and to pay the Town of Wellesley \$9,000. This agreement was carried out, the old ways discontinued, the new ways constructed, and, as a part of the work, the planking in the Everett street crossing was removed and a fence built at this point across the northerly side of the location. The town and the railroad company, when they carried out the terms of agreement, assumed and believed that the crossing had been discontinued.

Certain owners of parts of the original Blanchard tract of land maintained that Everett street was still an existing private right of way across the tracks, and based their claim upon the fact that the plan of the location of 1888, filed with the selectmen and later in the registry of deeds at Dedham, showed Everett street as extended by solid black lines across the railroad location. The new location also showed by red lines at either side that it intersected Everett street. These persons continued to make use of the crossing freely, with the result that the Boston and Albany Railroad, in 1914, sought by an equity proceeding in the Superior Court to enjoin a certain Swenson, a landowner

upon the northerly side of the location, from using the Everett street crossing, claiming that the way had been discontinued by the location of 1888. Mr. Justice Jenney found that the way had been extinguished by the location of 1888 and entered a decree accordingly. The case subsequently went to the Supreme Judicial Court and is reported in 224 Mass. 88. The full court held that the plan controlled and that upon the lines set out upon the plan the right of way was not extinguished.

In that situation the railroad filed the pending petition to secure a discontinuance of the crossing, contending that there is danger to travel in using the existing way and that there are ample opportunities for crossing the tracks at other points.

Linden-street bridge and Kingsbury-street bridge were both constructed under the agreement of 1888; Linden-street bridge is 800 feet and Kingsbury-street bridge is 2,200 feet from the Everett-street crossing. Weston road, another overhead crossing, is 1,200 feet from Everett street. It was agreed by the parties interested that a crossing at Everett street was not desired for vehicular traffic and that its only value was to provide a shorter way of reaching Wellesley square, the town hall and the library, from that part of Wellesley north of the railroad location.

It appeared that from a point upon the southerly side of Everett-street crossing, approaching trains from the east may be seen at a distance of 1,200 feet upon the local eastbound track, and 1,000 feet upon the eastbound express track, and that westbound traffic may be observed for about three-quarters of a mile from a point on the northerly side of the crossing. The view from the west is almost entirely obstructed by dense shrubbery. The view toward the east is practically the same as on the southerly side, about three-quarters of a mile. The total train traffic, east and west, is about 140 to 145 trains, half eastbound and half westbound, daily. Passenger trains are 48 in number, half of which are express trains which go through at much more than local speed. Counts of persons using the crossing were submitted, and it is significant that upon the day the counts were taken, of 117 people who crossed on the north side but 4 were women, and of 97 who crossed upon the south side but 6 were women. It must be assumed that if the crossing were regarded as safe for the general use of pedestrians, it would be more largely used by women.

Upon consideration of all the evidence, we are of the opinion that the crossing of the tracks at this point is dangerous and

having in mind the opportunities given to cross by overhead bridges at the other points above described and the counts of pedestrian traffic taken, there is no such necessary use of the crossing as to warrant the building of an underpass or an overhead bridge. We therefore decide that the security and convenience of the public require that the crossing of the private way known as Everett street and the Boston and Albany railroad, in Wellesley, be discontinued, without building a new way in substitution therefor. We prescribe the manner and limits of such discontinuance as follows: —

Beginning at a stone monument set in the ground at the intersection of the southwesterly line of said Everett street with the southeasterly side line of the location of the Boston and Albany railroad distant thirty-one and seventy-five hundredths (31.75) feet southeasterly from the base line of said location, filed with the county commissioners of Norfolk county, October 10, 1883, measured at right angles thereto; thence running northwestwardly by the said southwesterly line of said Everett street across the land, location and tracks of the said Boston and Albany railroad about one hundred and eighty-eight (188) feet to the dividing line between land of the said railroad company and land now or formerly of C. B. Dana; thence turning a right angle and running northeastwardly across said Everett street to the northeasterly line thereof; thence turning and running southeastwardly by the said northeasterly line of said Everett street about one hundred and eighty-eight (188) feet to a point distant thirty-one and seventy-five hundredths (31.75) feet southeasterly from the base line of said location filed October 10, 1883, measured at right angles thereto; thence turning and running southwestwardly across said Everett street to the place of beginning, as shown within lines tinted red on a plan dated March, 1917, and entitled "Plan showing a Proposed Discontinuance of a Portion of Everett street, Wellesley," filed with this decision and made a part hereof.

Any work necessary to effect said discontinuance shall be done by the Boston and Albany Railroad Company.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

AUGUST 21, 1917.

[P. S. C. 1679]

Commissioners.

ALTERATION OF CROSSINGS.

Petition of the New York, New Haven and Hartford Railroad Company for approval of agreement for alteration in the crossing of highway and railroad in Attleboro.

It appearing, after notice and hearing, that the mayor and city council of Attleboro and the directors of the New York, New Haven and Hartford Railroad Company and of the Boston and Providence Railroad Corporation are of opinion that it is necessary for the security and convenience of the public that an alteration be made in the bridge which carries Washington street over the Boston and Providence railroad (New York, New Haven and Hartford Railroad Company, lessee) in said city of Attleboro; that they are agreed upon the character of the alteration to be made, and that an instrument in writing specifying the manner and limits within which said alteration shall be made, the party by whom the work shall be done, the general method of construction and the apportionment of cost, has been duly executed by the mayor of the City of Attleboro and by the presidents of the New York, New Haven and Hartford Railroad Company and the Boston and Providence Railroad Corporation, a copy of which agreement is as follows: —

AGREEMENT FOR ALTERATION OF BRIDGE AND HIGHWAY KNOWN AS
WASHINGTON STREET AT CROSSING OVER THE RAILROAD OF THE
BOSTON AND PROVIDENCE RAILROAD CORPORATION IN THE CITY OF
ATTLEBORO.

Whereas there is a certain highway in the city of Attleboro known as Washington street which crosses the railroad of the Boston and Providence Railroad Corporation, leased to and operated by the New York, New Haven and Hartford Railroad Company, and the directors of said railroad companies and the mayor and council of said city are of the opinion that it is necessary for the security and convenience of the public that an alteration shall be made in said bridge by which a sidewalk shall be added thereto on the easterly side of said bridge, and have agreed as to the alterations which shall be made:

Now therefore in pursuance of the provisions of the Acts of 1906, Chapter 463, Part I, Section 41, this agreement in writing is made and signed in behalf of said city by the mayor thereunto duly authorized, and in behalf of said railroad companies by their respective presidents thereunto duly authorized, specifying the manner and limits within which the alterations shall be made, by whom the work shall be done, the general method of construction, and how the cost shall be borne.

Alterations.

A sidewalk eight feet in width shall be constructed near the easterly side of Washington street and extending from the state line between Rhode Island and Massachusetts to the southerly side of Turner street. From the state line to the easterly wing wall of the south abutment of the bridge which carries the street over the railroad the sidewalk shall be constructed on earth fill. From said easterly wing wall of the south abutment to within about seventy-five feet of the southerly line of Turner street the sidewalk shall be constructed of wood with plank floor, wooden stringers, caps, posts, sills, etc., with necessary concrete footings. The rest of the sidewalk to Turner street shall be constructed on an earth fill. A wooden fence shall be constructed on the easterly side of the sidewalk, with a wooden or other kind of curb on the side next the roadway. The sidewalk shall be carried over the railroad so as to provide as much clearance each side of the rails, and as much clearance above the rails as now exists at the present bridge.

Plan.

The alterations hereinbefore described are shown upon a plan herewith, and made a part hereof, entitled "Boston & Providence R.R. operated by the N. Y. N. H. & H. R.R. Providence Division Proposed Sidewalk at Washington St. Br. No. 37. 96 Attleboro, Mass. May 2, 1917."

Performance of the Work.

The City of Attleboro shall furnish and place the fill required for the seventy-five feet of sidewalk next south of Turner street, and the New York, New Haven and Hartford Railroad Company shall furnish and construct in place all the rest of the work.

Apportionment of Expenses.

The City of Attleboro shall bear the expense of furnishing material for, and constructing that portion of the sidewalk which it is to construct, and the New York, New Haven and Hartford Railroad Company shall bear the expense of all of the rest of the work, including cost of any necessary hearings, expenses of the Public Service Commission and its necessary agents, and all damages.

Signed in behalf of the city of Attleboro by the mayor thereunto duly authorized, and in behalf of the railroad companies by their respective presidents thereunto duly authorized.

CITY OF ATTLEBORO,

By HAROLD E. SWEET, *Mayor*.

THE NEW YORK, NEW HAVEN AND HARTFORD
RAILROAD COMPANY,

By E. J. PEARSON, *President*.

BOSTON AND PROVIDENCE RAILROAD CORPORATION,

By PHILIP DEXTER, *President*.

It is

Ordered, That the approval of the Commission be hereby given to the agreement and to the alterations therein set forth, as necessary for the convenience and security of the public.

Attest: ANDREW A. HIGHLANDS,
SEPTEMBER 24, 1917. [P. S. C. 1883] *Secretary.*

Petition of the City Council of Boston and the West End Street Railway Company (by the Boston Elevated Railway Company, its attorney) relative to the alteration of the crossing at Broadway on the Boston and Albany railroad in the city of Boston.

It appearing, after public notice to and hearing all parties interested, that Broadway, in the city of Boston, is a public way which crosses the tracks of the Boston and Albany railroad by an overhead bridge, and that it is necessary for the security and convenience of the public that an alteration be made in said bridge which does not involve the abolition of a crossing at grade, for the purpose of rebuilding the floor system of the bridge and making certain structural changes to strengthen and improve it, —

It is, therefore,

Ordered, That the said bridge, passing over said tracks at Broadway, in the city of Boston, be altered and rebuilt in the manner and within the limits hereinafter described:—

- (1) The present floor system of the bridge to be removed.
- (2) The present abutment and pier are to remain unchanged, except so far as is necessary to adapt them to the new floor system.
- (3) The present clear head room from the top of the rail to the under side of the bridge shall not be diminished.
- (4) The new floor system is to be suspended from the present trusses which are to remain in their present location and are to be substantially unchanged.
- (5) Provision shall be made for the laying of two car tracks upon the bridge, on either side of the center trusses, and the surface of the bridge shall be of wood block or other form of wood paving.
- (6) There shall be a yellow pine plank sidewalk not less than 6' 6" wide on either side of the bridge outside the two outside trusses, with suitable iron fences to protect the public.
- (7) The grade of the floor of the bridge and sidewalk is to remain substantially unchanged.

(8) The new floor system shall be designed in accordance with specifications of the Public Service Commission for bridges carrying electric railways.

(9) The general construction of the floor system shall be as shown on plan marked "Broadway Bridge," dated February 14, 1917, and signed by E. F. Murphy, Commissioner of Public Works, which plan is signed by, and filed with the records of, this Commission, and is made a part of this decision.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

MAY 3, 1917. [P. S. C. 1638]

Commissioners.

Petition of the New York, New Haven and Hartford Railroad Company relative to the alteration of certain crossings of its railroad by certain highways in the South Boston district of the city of Boston; and of the location of the railroad and of the highways and bridges at said crossings.

F. A. FARNHAM for the New York, New Haven and Hartford Railroad Company.

EDWARD P. BARRY for South Boston Citizens' Association.

FRANCIS J. W. FORD for South Boston Trade Association.

In this petition the directors of the New York, New Haven and Hartford Railroad Company represent "that there are in that part of the city of Boston known as South Boston certain streets and highways which cross the railroad of said railroad company by bridges above the grade of said railroad," and that they "are of the opinion that it is necessary for the security and convenience of the public that an alteration which does not involve the abolition of a crossing at grade should be made in said crossings, in the approaches thereto, and in the location of the railroad and of said highways and bridges at said crossings; that said streets and highways are known, respectively, as West Second street, Bolton street, West Third street, Athens street, West Broadway, Silver street, West Fourth street, Gold street, West Fifth street, West Sixth street, and Dorchester avenue." Wherefore, they request that the Commission "will after public notice and a hearing of all parties interested decide that such

alterations are necessary and prescribe the manner and limits within which they shall be made."

Public hearings were held on March 28-30, 1917. A view of the premises was taken by the Commission on May 21 and careful examination has also been made by its inspectors and engineers. The petition is brought under the provisions of section 23 of Part I of chapter 463 of the Acts of 1906, which reads in part as follows:—

If a public way and a railroad cross each other, and the board of aldermen of the city or the selectmen of the town in which the crossing is situated, or the directors of the railroad corporation, or the directors of a street railway company having tracks on the said way are of opinion that it is necessary for the security or convenience of the public that an alteration which does not involve the abolition of a crossing at grade should be made in the crossing, the approaches thereto, the location of the railroad or way, or in a bridge at the crossing, they shall apply to the county commissioners, or, if the crossing is situated, in whole or in part, in the city of Boston, to the board of railroad commissioners, who shall, after public notice, hear all parties interested, and, if they decide that such alteration is necessary, shall prescribe the manner and limits within which it shall be made, and forthwith certify their decision to the parties and to said board.

An alternative method of procedure is offered by section 41 of the same Part I. Under this latter section, provision is made for determining the alterations to be made at a crossing by agreement between the railroad company and the city or town in which the crossing is located, the agreement being subject to the approval of this Commission. The company attempted to secure action under this section, but the Boston City Council, on March 5, 1917, refused to give its assent. Because of this refusal, the directors began the present proceedings under the alternative provisions of section 23.

Stated briefly, what the railroad company desires to do is to widen the so-called "South Boston Cut," so that it will accommodate four tracks instead of two, as at present. This cut extends from West First street, on the north, to and under Dorchester avenue on the south, a distance of a little more than half a mile, and lies between and parallel to A street and B street. All the streets mentioned in the petition cross it upon bridges which are to be rebuilt and lengthened if the company's plans are approved. The cut was constructed about sixty years ago and is the sole passageway which the New York, New Haven

and Hartford Railroad Company has to the Boston waterfront and to its freight terminals in South Boston. All the freight which it brings in and out of Boston goes through this cut. It is the means of access, not only to the company's own terminals and wharves, but to the extensive lands and piers of the Commonwealth and to various large private manufacturing concerns and terminal properties. The traffic passing through it is very large and is constantly growing. A count taken by the Commission's inspectors on May 31 and June 1, 1917, showed 667 train movements during 24 hours, of which 105 were through movements and 562 were switching movements.

Since its original construction many years ago, little or no improvement has been made in the cut. On the contrary, conditions have grown worse, for the retaining walls on either side have crept in, somewhat reducing the width. The minimum dimensions are 21 feet $10\frac{3}{4}$ inches wide, 14 feet 9 inches clear head room, with a distance of only 3 feet in certain places between the outer rail of the tracks and the wall. So narrow is the space at the present time that, although a double track is laid, two trains cannot pass each other without danger of side-scraping, and this necessitates what is practically single track operation. Some of the very large modern freight cars and locomotives will not go through at all. In the past two or three years the company has purchased about 150 of these large locomotives and more are to be ordered. None of these can enter the Boston freight terminal at present because of the conditions in the cut, although they are used in moving traffic over the main line to and from Boston. The resulting situation was described by the superintendent of the Midland Division as follows (Record, pp. 30, 31): —

. . . That forces us to make other arrangements to get the trains that they bring toward Boston, into the freight terminal, and results in very serious delays to the traffic that these trains are hauling, especially freight of a perishable nature that arrives in a group of early-morning trains which are due in Boston before 6 A.M., and require placing for delivery before 6 A.M.

We cannot bring those trains into the west end of the cut, South Bay Junction, and change, taking off the large engines which cannot run through the cut and substituting smaller engines, without jeopardizing the passenger service, the commuter service, and very frequently we have to hold those trains two or three or four hours at Readville for an opportunity to bring them in and change engines and get to the freight terminal without interference with the passenger service.

Further delay is caused at the cut by the fact that it is necessary to use one of the tracks as a switching lead for the yard tracks at the terminal, and this frequently holds up entering trains.

The contemplated alterations will cost in the neighborhood of \$1,000,000, but it is quite clear that, from a railroad and industrial standpoint, the expenditure is amply justified. It needs no argument to prove that four tracks through the cut would greatly improve operating conditions, reduce congestion, diminish delay and make possible a far more efficient and economical handling of freight traffic to and from the Boston terminal. Indeed, no one has seriously questioned this fact. It has been stated, not only by the railroad witnesses, but in reports filed by the transportation committee of the Boston Chamber of Commerce and by the Boston Finance Commission, and the further opinion was expressed at the public hearings by the chairman of the Commission on Waterways and Public Lands, that plans for the development of the lands of the Commonwealth in South Boston are absolutely dependent upon proper railroad facilities, and that these facilities can be provided in no other way than by the construction of additional tracks in the cut; nor does it appear that the Boston City Council reached any different conclusion.

The objections of the remonstrants were based primarily upon the damage to health and property in South Boston caused by the noise, jar and smoke of trains passing through the cut. Undoubtedly the grievance from this source has been great. The cut is narrow and lined by straight walls, from which wooden tenements rise on either side. These tenements are blackened by smoke, and it can hardly be questioned that the jar and noise of continual train operation, in addition to the smoke, have made the locality an unpleasant and unhealthful one in which to live. The citizens of South Boston now feel, and the opinion seems to be a prevalent one, that matters will be made even worse if four tracks are permitted in the cut and the opportunities for moving traffic are thus increased. Furthermore, the property owners in the vicinity fear, as the cut has been in existence for so long a time and the company already owns land sufficient to effect the proposed widening, that it will be impossible to secure compensation in the courts for any damage which they may suffer.

Apparently the remonstrants have no wish to interfere with the development of proper railroad facilities, but hold that, if

the alterations desired by the company are permitted, steps should at the same time be taken to mitigate the present nuisance or at least to prevent any increase. It is suggested that electric operation should be required, or that the cut should be covered, or that a classification yard should be established in the vicinity of Southampton street which will reduce the number of switching movements through the cut. Before dealing with these suggestions, however, it is desirable to consider how far, if at all, conditions will actually be changed for the worse if the alterations are allowed without any such requirements.

It appears that at present the track and roadbed within the cut are of inferior construction. The company's engineers state, and inspection shows, that the ballast is a shallow layer of gravel laid upon a subsoil of deep clay. The drainage is poor and the water-soaked clay communicates vibrations very readily. In the new construction it is proposed to dig out a large amount of this clay, underdrain the rest, place a 6-inch layer of coarse gravel upon the clay and an 18-inch layer of rock ballast upon the gravel, and lay 100-pound rails instead of 80-pound rails as at present. It is claimed by the company that such a foundation will cushion the shock and distribute it over a wider area, so that the vibration and jar from passing trains will be diminished. The engineers of the Commission believe this claim to be well founded. It also appears that, when the work is done, the tracks will not be so near the sides of the cut. On the A street side, for example, it is proposed to place the track about 6 feet farther away from the wall than it is now. On the B street side an earth slope will be substituted for a retaining wall and this, together with the increased width of the cut, may have a tendency to diminish the intensity of the noise, as the present walls act, to some extent, as a sounding board.

Apart from the number of trains which are operated, there seems to be no reason why present conditions, so far as noise and jar are concerned, should become worse, and there is at least a reasonable prospect that they will become better. The purpose of the four tracks, however, is to provide greater capacity, and it may be anticipated that, if they are installed, traffic through the cut will gradually increase. As an offset to this, it is claimed by the company, and the claim seems justified, that the most objectionable noise and smoke is produced by trains stopping and starting in the cut, an occurrence which is now quite frequent but will become far less frequent when the addi-

tional room and track capacity are provided. It will be possible to use one track as a switching lead without obstructing the passage of other trains through the cut, as at present, and the grade of the tracks will also be improved.

It is further to be observed that the depreciation in value of the adjoining property for residential purposes which has already taken place may be offset, if proper facilities are provided, by an appreciation in value for commercial purposes. The tendency in this section of South Boston is undoubtedly in the industrial direction. There has been a noticeable development in this respect within the last few years, and, while no one can undertake to predict the future with any confidence, it seems probable that this development is likely to spread, if conditions are made favorable, to the district now in question. Recent litigation also indicates that the possibility of securing compensation in the courts for any damage that may be suffered from unnecessary noise and smoke may be less remote than has been assumed.

It is by no means certain, therefore, that the alterations which are contemplated will substantially increase present injury from noise, jar and smoke, or will cause further depreciation in the value of adjoining property. While this is so, however, it is not a sufficient answer to the complaints of the remonstrants, for conditions as they now exist are bad enough, and, if they can be improved by any reasonable or practicable means, such improvements ought to be made.

Electrification would, of course, be the best solution; but the existing financial condition of the New York, New Haven and Hartford Railroad Company holds forth little promise of any comprehensive program of electrification in and about Boston within the immediate future. It is to be hoped that, within a few years, the company may be in a financial position to do something more than meet its immediate pressing necessities. When that time comes, it will be the duty of the public authorities of the Commonwealth to insist that the electrification of the Boston lines shall be one of the first of the larger projects undertaken by the company for the improvement of its existing facilities, but action in this direction would at present be futile. The suggested covering of the cut is not desirable. It would, in effect, create a tunnel about half a mile long which would, by reason of the heavy traffic, be filled with smoke and gases most of the time, even if well ventilated. In the event of electrification, such a roof over the cut would be wholly useless. A

classification yard in the vicinity of Southampton street or at Readville is an improvement which is already contemplated by the management of the road. Such a yard would at least decrease the number of switching movements in the cut, although this might in part be offset by an increase in the number of through train movements, and is so desirable on general grounds for the good of the service that no unnecessary time ought to be lost in carrying the plans for its construction into execution.

In recent years many attempts have been made by railroads to abate or reduce the smoke nuisance by the use of automatic stokers, so-called smoke-consuming devices or the employment of coke, anthracite, oil or pulverized coal for fuel. By direction of the Commission, since the hearings in this case, the inspection Department has been investigating this matter and the results achieved in certain other parts of the country have already been observed and studied. While this investigation has not progressed far enough to warrant the Commission at this time in prescribing the specific measures which should be adopted for the abatement of the smoke nuisance in the South Boston cut, we are satisfied that, apart from electrification, reasonable and practicable means are available which will not only prevent any increase in the discomfort and damage to adjacent residents, as the result of the changes contemplated in the cut, but will make possible a substantial betterment of the conditions which now exist. Moreover, with the advent of electrification, which is only deferred and must ultimately come, complete relief from these conditions will be afforded with a consequent enhancement of present land values in this vicinity. Furthermore, if the measures above suggested for the reduction of the smoke nuisance should fail for any reason not now foreseen by the Commission to realize the results anticipated, it is possible that further investigation will show that a plan may presently be adopted without prohibitive expense which will provide at least for electric switching operation within the terminal yard.

In view of these facts it would not be consistent with the public interest further to defer or retard the carrying out of plans which are essential to the provision of efficient and adequate transportation facilities for Boston. The cut has been an established railroad thoroughfare for the past sixty years. A refusal to permit the enlargement of this thoroughfare to accommodate the business which it is called upon to handle could not be justified. The plans submitted by the company have therefore been approved in the order entered below.

In the meantime the Commission will press to an early conclusion its study of the smoke problem, in order that some definite action may be taken in the immediate future. The question is one of general importance, for South Boston is not the only locality in the Commonwealth which has suffered grievously from this source. There is probably no other locality, however, where conditions are worse in this respect, and it is proper that any steps toward improvement should begin at this point. Under far more favorable conditions of construction than exist at the present time it is probable that the enlargement of the cut could not be completed for some months, and by the time the work is finished it will be possible contemporaneously to carry into effect definite plans which will result in abatement of the smoke nuisance.

ORDER.

It appearing, after public notice and hearing all parties interested, that certain highways, known respectively as West Second street, Bolton street, West Third street, Athens street, West Broadway, Silver street, West Fourth street, Gold street, West Fifth street and West Sixth street, are located in that part of the city of Boston known as South Boston and cross the railroad of the New York, New Haven and Hartford Railroad Company by bridges above the grade of said railroad, and that it is necessary for the security and convenience of the public that an alteration should be made in said crossings, in the approaches thereto and in the location of the railroad and of said highways and bridges at said crossings, which does not involve the abolition of a crossing at grade, —

It is

Ordered, That the crossings of the railroad of the New York, New Haven and Hartford Railroad Company and the highways known respectively as West Second street, Bolton street, West Third street, Athens street, West Broadway, Silver street, West Fourth street, Gold street, West Fifth street and West Sixth street in that part of the city of Boston known as South Boston be altered in the manner and within the limits hereinafter prescribed: —

West Second Street.

The bridge carrying West Second street over the New York, New Haven and Hartford railroad shall be removed and a new bridge shall be constructed spanning four tracks and a turnout, and giving not less than seventeen (17) feet clear headroom above the tops of the rails of the railroad as lowered in grade.

The curb grades of West Second street are hereby changed and established as follows: —

The northeasterly curb at its intersection with the northwesterly curb of B street shall be at elevation about twenty-six and eighteen hundredths (26.18) at the present elevation of the curb; thence northwesterly by an ascending grade of three and seventy-four hundredths (3.74) feet per one hundred (100) feet one hundred forty-two and three-tenths (142.3) feet to elevation thirty-one and fifty hundredths (31.50); thence continuing northwesterly by a vertical curve forty-two (42) feet to elevation thirty-one and thirty-nine hundredths (31.39); thence continuing northwesterly by a descending grade of four and three-tenths (4.3) feet per one hundred (100) feet eighteen and one-tenth (18.1) feet to elevation about thirty and sixty-one hundredths (30.61) at the present elevation of the curb.

The southwesterly curb at its intersection with the northwesterly curb of B street shall be at elevation about twenty-six and seventy-three hundredths (26.73) at the present elevation of the curb; thence northwesterly by an ascending grade of three and thirty-five hundredths (3.35) feet per one hundred (100) feet one hundred forty-two and three-tenths (142.3) feet to elevation thirty-one and fifty hundredths (31.50); thence continuing northwesterly by a vertical curve forty-two (42) feet to elevation thirty-one and thirty-nine hundredths (31.39); thence continuing northwesterly by a descending grade of four and three-tenths (4.3) feet per one hundred (100) feet eighteen and one-tenth (18.1) feet to elevation about thirty and sixty-one hundredths (30.61) at the present elevation of the curb.

Bolton Street.

The bridge carrying Bolton street over the New York, New Haven and Hartford railroad shall be removed and a new bridge shall be constructed spanning four tracks, and giving not less than seventeen (17) feet clear headroom above the tops of the rails of the railroad as lowered in grade.

The curb grades of Bolton street are hereby changed and established as follows: —

The northeasterly curb at a point fifty-three (53) feet southeasterly from the base line of location of the New York, New Haven and Hartford Railroad shall be at elevation about thirty and nineteen hundredths (30.19) at the present elevation of the curb; thence northwesterly by an ascending grade three-tenths (0.3) feet per one hundred (100) feet sixty-five (65) feet to elevation thirty and thirty-nine hundredths (30.39); thence by a descending grade of one and three-tenths (1.3) feet per one hundred (100) feet thirteen (13) feet to elevation about thirty and twenty-two hundredths (30.22) at the present elevation of the curb.

The southwesterly curb at a point fifty-three (53) feet southeasterly from the base line of location of the New York, New Haven and Hartford railroad shall be at elevation about thirty and nineteen hundredths (30.19) at the present elevation of the curb; thence northwesterly by an

ascending grade of three-tenths (0.3) feet per one hundred (100) feet sixty-five (65) feet to elevation thirty and thirty-nine hundredths (30.39); thence continuing northwesterly by a descending grade of eighty-five hundredths (0.85) feet per one hundred (100) feet thirteen (13) feet to elevation about thirty and twenty-eight hundredths (30.28) at the present elevation of the curb.

West Third Street.

The bridge carrying West Third street over the New York, New Haven and Hartford railroad shall be removed and a new bridge shall be constructed spanning four tracks, and giving not less than seventeen (17) feet clear headroom above the tops of the rails of the railroad as lowered in grade.

The curb grades of West Third street are hereby changed and established as follows: —

The northeasterly curb at a point fifty-three (53) feet southeasterly from the base line of location of the New York, New Haven and Hartford railroad shall be at elevation about thirty-one and fifteen hundredths (31.15) at the present elevation of the curb; thence northwesterly by an ascending grade of fifty-four hundredths (0.54) feet per one hundred (100) feet sixty-five (65) feet to elevation about thirty-one and fifty hundredths (31.50) at the present elevation of the curb.

The southwesterly curb at a point fifty-three (53) feet southeasterly from the base line of location of the New York, New Haven and Hartford railroad shall be at elevation about thirty-one and fifteen hundredths (31.15) at the present elevation of the curb; thence northwesterly by an ascending grade of fifty-four hundredths (0.54) feet per one hundred (100) feet sixty-five (65) feet to elevation about thirty-one and fifty hundredths (31.50) at the present elevation of the curb.

Athens Street.

The bridge carrying Athens street over the New York, New Haven and Hartford railroad shall be removed and a new bridge shall be constructed spanning four tracks, and giving not less than seventeen (17) feet clear headroom above the tops of the rails of the railroad as lowered in grade.

The curb grades of Athens street are hereby changed and established as follows: —

The northeasterly curb at a point sixty-three (63) feet southeasterly from the base line of location of the New York, New Haven and Hartford railroad shall be at elevation about twenty-eight and sixty-six hundredths (28.66) at the present elevation of the curb; thence northwesterly by an ascending grade of one and eighteen hundredths (1.18) feet per one hundred (100) feet eighty-nine (89) feet to elevation about twenty-nine and seventy-one hundredths (29.71) at the present elevation of the curb.

The southwesterly curb at a point sixty-three (63) feet southeasterly from the base line of location of the New York, New Haven and Hartford railroad shall be at elevation about twenty-eight and sixty-six hundredths

(28.66) at the present elevation of the curb; thence northwesterly by an ascending grade of one and eighteen hundredths (1.18) feet per one hundred (100) feet eighty-nine (89) feet to elevation about twenty-nine and seventy-one hundredths (29.71) at the present elevation of the curb.

West Broadway.

The bridge carrying West Broadway over the New York, New Haven and Hartford railroad shall be removed and a new bridge shall be constructed spanning four tracks, and giving not less than seventeen (17) feet clear headroom above the tops of the rails of the railroad as lowered in grade.

The curb grades of West Broadway are hereby changed and established as follows: —

The northeasterly curb at a point eighty-seven and eighteen hundredths (87.18) feet southeasterly from the base line of location of the New York, New Haven and Hartford railroad shall be at elevation about twenty-six and thirty-eight hundredths (26.38) at the present elevation of the curb; thence by an ascending grade of three and five-tenths (3.5) feet per one hundred (100) feet twenty-seven and forty-three hundredths (27.43) feet to elevation twenty-seven and thirty-four hundredths (27.34); thence continuing northwesterly by a vertical curve twenty (20) feet to elevation twenty-seven and eighty-six hundredths (27.86); thence continuing northwesterly by an ascending grade of one and seventy-four hundredths (1.74) feet per one hundred (100) feet fifty-one and seventy-five hundredths (51.75) feet to elevation about twenty-eight and seventy-six hundredths (28.76) at the present elevation of the curb.

The southwesterly curb at a point ninety-two (92) feet southeasterly from the base line of location of the New York, New Haven and Hartford railroad shall be at elevation about twenty-six and twenty-seven hundredths (26.27) at the present elevation of the curb; thence northeasterly by an ascending grade of three and five-tenths (3.5) feet per one hundred (100) feet thirty-two and twenty-five hundredths (32.25) feet to elevation twenty-seven and forty hundredths (27.40); thence continuing northwesterly by a vertical curve twenty (20) feet to elevation twenty-seven and eighty-six hundredths (27.86); thence continuing northwesterly by an ascending grade of one and one tenth (1.1) feet per one hundred (100) feet fifty-one and seventy-five hundredths (51.75) feet to elevation about twenty-eight and forty-three hundredths (28.43) at the present elevation of the curb.

Silver Street.

The bridge carrying Silver street over the New York, New Haven and Hartford railroad shall be removed and a new bridge shall be constructed spanning four tracks, and giving not less than seventeen (17) feet clear headroom above the tops of the rails of the railroad as lowered in grade.

The curb grades of Silver street are hereby changed and established as follows: —

The northeasterly curb at a point one hundred twenty-nine (129) feet southeasterly from the base line of location of the New York, New Haven and Hartford railroad shall be at elevation about twenty-one and forty-five hundredths (21.45) at the present elevation of the curb; thence northwesterly by a vertical curve twenty-nine (29) feet to elevation twenty-two and twelve hundredths (22.12); thence continuing northwesterly by an ascending grade of five (5) feet per one hundred (100) feet thirty-nine and three-tenths (39.3) feet to elevation twenty-four and nine hundredths (24.09); thence continuing northwesterly by a vertical curve sixty-one and three hundredths (61.03) feet to elevation twenty-four and eighty-three hundredths (24.83); thence continuing northwesterly by a descending grade of two and six-tenths (2.6) feet per one hundred (100) feet fifteen and sixty-seven hundredths (15.67) feet to elevation about twenty-four and forty-three hundredths (24.43) at the present elevation of the curb.

The southwesterly curb at a point one hundred thirty-four (134) feet southeasterly from the base line of location of the New York, New Haven and Hartford railroad shall be at elevation about twenty-one and thirteen hundredths (21.13) at the present elevation of the curb; thence northwesterly by a vertical curve thirty-four (34) feet to elevation twenty-two and twelve hundredths (22.12); thence continuing northwesterly by an ascending grade of five (5) feet per one hundred (100) feet thirty-nine and three-tenths (39.3) feet to elevation twenty-four and nine hundredths (24.09); thence continuing northwesterly by a vertical curve sixty-one and three hundredths (61.03) feet to elevation twenty-four and eighty-three hundredths (24.83); thence continuing northwesterly by a descending grade of two and six-tenths (2.6) feet per one hundred (100) feet twenty-four and sixty-seven hundredths (24.67) feet to elevation about twenty-four and nineteen one-hundredths (24.19) at the present elevation of the curb.

West Fourth Street.

The bridge carrying West Fourth street over the New York, New Haven and Hartford railroad shall be removed and a new bridge shall be constructed spanning four tracks, and giving not less than seventeen (17) feet clear headroom above the tops of the rails of the railroad as lowered in grade.

The curb grades of West Fourth street are hereby changed and established as follows:—

The northeasterly curb at a point one hundred eighty-three (183) feet distant southeasterly from the base line of location of the New York, New Haven and Hartford railroad shall be at elevation about eighteen and ninety-four hundredths (18.94) at the present elevation of the curb; thence northwesterly by a vertical curve thirty (30) feet to elevation nineteen and fifty-five hundredths (19.55); thence continuing northwesterly by an ascending grade of four and six hundredths (4.06) feet per one hundred (100) feet one hundred and fifty hundredths (100.50)

feet to elevation twenty-three and sixty-two hundredths (23.62); thence continuing northwesterly by a vertical curve sixty-four (64.0) feet to elevation twenty-three and forty-five hundredths (23.45); thence continuing northwesterly by a descending grade of four and sixty-one hundredths (4.61) feet per one hundred (100) feet thirty-one (31.0) feet to elevation about twenty-two and two hundredths (22.02) at the present elevation of the curb.

The southwesterly curb at a point one hundred eighty-three (183) feet southeasterly from the base line of location of the New York, New Haven and Hartford railroad shall be at elevation about eighteen and eighty-four hundredths (18.84) at the present elevation of the curb; thence northwesterly by a vertical curve thirty (30) feet to elevation nineteen and fifty-five hundredths (19.55); thence continuing northwesterly by an ascending grade of four and six hundredths (4.06) feet per one hundred (100) feet one hundred and fifty hundredths (100.50) feet to elevation twenty-three and sixty-two hundredths (23.62); thence continuing northwesterly by a vertical curve sixty-four (64.0) feet to elevation twenty-three and forty-five hundredths (23.45); thence continuing northwesterly by a descending grade of four and forty hundredths (4.40) feet per one hundred (100) feet twenty-eight and fifty hundredths (28.50) feet to elevation about twenty-two and twenty hundredths (22.20) at the present elevation of the curb.

Gold Street.

The bridge carrying Gold street over the New York, New Haven and Hartford railroad shall be removed and a new bridge shall be constructed spanning four tracks, and giving not less than seventeen (17) feet clear headroom above the tops of the rails of the railroad as lowered in grade.

The curb grades of Gold street are hereby changed and established as follows: —

The northeasterly curb at a point fifty-three (53) feet distant southeasterly from the base line of location of the New York, New Haven and Hartford railroad shall be at elevation about twenty-five and twenty-six hundredths (25.26) at the present elevation of the curb; thence northwesterly by a vertical curve fifty-two (52) feet to elevation twenty-seven and twenty-eight hundredths (27.28); thence continuing northwesterly by a vertical curve thirty-four (34) feet to elevation about twenty-six and fifty hundredths (26.50) at the present elevation of the curb.

The southwesterly curb at a point fifty-three (53) feet distant from the base line of location of the New York, New Haven and Hartford railroad shall be at elevation about twenty-five and twenty-six hundredths (25.26) at the present elevation of the curb; thence northwesterly by a vertical curve fifty-two (52) feet to elevation twenty-seven and twenty-eight hundredths (27.28); thence continuing northwesterly by a vertical curve thirty-four (34) feet to elevation about twenty-six and fifty hundredths (26.50) at the present elevation of the curb.

West Fifth Street.

The bridge carrying West Fifth street over the New York, New Haven and Hartford railroad shall be removed and a new bridge shall be constructed spanning four tracks, and giving not less than seventeen (17) feet clear headroom above the tops of the rails of the railroad as lowered in grade.

The curb grades of West Fifth street are hereby changed and established as follows: —

The northeasterly curb at its intersection with the northwesterly curb of B street shall be at elevation about sixteen and twenty-six hundredths (16.26) at the present elevation of the curb; thence northwesterly by an ascending grade of four and ninety-three hundredths (4.93) feet per one hundred (100) feet one hundred twenty-seven and one-tenth (127.1) feet to elevation twenty-two and fifty-three hundredths (22.53); thence continuing northwesterly by a vertical curve seventy-four (74.0) feet to elevation twenty-two and thirty-nine hundredths (22.39); thence continuing northwesterly by a descending grade of five and three-tenths (5.3) feet per one hundred (100) feet seventy-two and seven tenths (72.7) feet to elevation eighteen and fifty-four hundredths (18.54); thence continuing northwesterly by a vertical curve forty (40) feet to elevation about seventeen and forty-two hundredths (17.42) at the present elevation of the curb.

The southwesterly curb at its intersection with the northwesterly curb of B street shall be at elevation about sixteen and twenty hundredths (16.20) at the elevation of the present curb; thence northwesterly by an ascending grade of five (5) feet per one hundred (100) feet one hundred twenty-six and six-tenths (126.6) feet to elevation twenty-two and fifty-three hundredths (22.53); thence continuing northwesterly by a vertical curve seventy-four (74.0) feet to elevation twenty-two and forty-two hundredths (22.42); thence continuing northwesterly by a descending grade of five and three-tenths (5.3) feet per one hundred (100) feet sixty-one and four-tenths (61.4) feet to elevation nineteen and seventeen hundredths (19.17); thence continuing northwesterly by a vertical curve forty (40) feet to elevation about eighteen and twenty-eight hundredths (18.28) at the present elevation of the curb.

West Sixth Street.

The bridge carrying West Sixth street over the New York, New Haven and Hartford railroad shall be removed and a new bridge shall be constructed spanning four tracks, and giving not less than seventeen (17) feet clear headroom above the tops of the rails of the railroad as lowered in grade.

The curb grades of West Sixth street are hereby changed and established as follows: —

The northeasterly curb at its intersection with the northwesterly curb of B street shall be at elevation about sixteen and sixteen-hundredths (16.16) at the present elevation of the curb; thence northwesterly by an

ascending grade of four and nine-tenths (4.9) feet per one hundred (100) feet one hundred thirty-two and three-tenths (132.3) feet to elevation twenty-two and sixty-four hundredths (22.64); thence continuing northwesterly by a vertical curve sixty-four (64.0) feet to elevation twenty-three and four hundredths (23.04); thence continuing northwesterly by a descending grade of about three and sixty-seven hundredths (3.67) feet per one hundred (100) feet one hundred and five-tenths (100.5) feet to the easterly curb of Dorchester avenue as now or hereafter established in grade by the Boston Transit Commission.

The southwesterly curb at its intersection with the northwesterly curb of B street shall be at elevation about sixteen and nine-hundredths (16.09) at the present elevation of the curb; thence northwesterly by an ascending grade of four and ninety-five hundredths (4.95) feet per one hundred (100) feet one hundred thirty-two and three-tenths (132.3) feet to elevation twenty-two and sixty-eight hundredths (22.68); thence continuing northwesterly by a vertical curve sixty-four (64.0) feet to elevation twenty-three and seventeen-hundredths (23.17); thence continuing northwesterly by a descending grade of about three and twenty-eight hundredths (3.28) feet per one hundred (100) feet fifty-seven and one-tenth (57.1) feet to the easterly curb of Dorchester avenue as now or hereafter established in grade by the Boston Transit Commission.

Construction of Streets and Bridges.

West Second street, West Third street, West Broadway, West Fourth street, West Fifth street and West Sixth street shall be carried over the New York, New Haven and Hartford railroad by steel and concrete bridges supported on masonry abutments; the roadways and sidewalks on said bridges and the approaches thereto within the limits of the changes in grade hereinbefore described shall be surfaced with granite block pavement with cement grouted joints on the roadways and with artificial stone sidewalks with granite curbs.

Bolton street, Athens street, Silver street and Gold street shall be carried over said railroad by substantial steel bridges supported on masonry abutments, the roadways to be surfaced with creosoted wood block pavement and the sidewalks with wooden plank; the approaches to the bridges in the four last named streets, within the limits of the changes of grade hereinbefore described, shall be resurfaced with the same kind of pavement or sidewalk as now exists.

All of the bridges above mentioned shall be of the plate girder type designed in accordance with the specifications for bridges carrying electric railways, adopted by the Public Service Commission, revised March, 1915, and shall be constructed with a clear headroom of at least seventeen feet between the top of the rails of said railroad and the underside of said bridges.

Any changes in water or sewer pipes or the services connected therewith, or with fences on the street lines, required by the alterations above described shall be made to the satisfaction of the Commissioner of Public Works of the City of Boston.

Plans.

The above alteration shall be made substantially in accordance with ten (10) plans filed with the records of the Commission, numbered and entitled, respectively:—

No. 3. — N. Y., N. H. & H. R.R., Midland Division — Proposed South Boston Cut Improvement — Site Plan, West Second St., Scales: Hor. 1"=20'; Ver. 1"=8' — Sept. 13, 1916, with yellow date of Sept. 15, 1916.

No. 4. — N. Y., N. H. & H. R.R., Midland Division — Proposed South Boston Cut Improvement — Site Plan, Bolton St., Scales: Hor. 1"=20'; Ver. 1"=8' — May 3, 1916, with yellow date of Sept. 15, 1916.

No. 5. — N. Y., N. H. & H. R.R., Midland Division — Proposed South Boston Cut Improvement — Site Plan, West Third St., Scales: Hor. 1"=20'; Ver. 1"=8' — May 5, 1916, with yellow date of Sept. 15, 1916.

No. 6. — N. Y., N. H. & H. R.R., Midland Division — Proposed South Boston Cut Improvement — Site Plan, Athens St., Scales: Hor. 1"=20'; Ver. 1"=8' — May 4, 1916, with yellow date of Sept. 15, 1916.

No. 7. — N. Y., N. H. & H. R.R., Midland Division — Proposed South Boston Cut Improvement — Site Plan, West Broadway, Scales: Hor. 1"=20'; Ver. 1"=8' — May 4, 1916, with yellow date of Sept. 15, 1916.

No. 8. — N. Y., N. H. & H. R.R., Midland Division — Proposed South Boston Cut Improvement — Site Plan, Silver St., Scales: Hor. 1"=20'; Ver. 1"=8' — April 14, 1916, with yellow date of Sept. 15, 1916.

No. 9. — N. Y., N. H. & H. R.R., Midland Division — Proposed South Boston Cut Improvement — Site Plan, West Fourth St., Scales: Hor. 1"=20'; Ver. 1"=8' — April 13, 1916, with yellow date of May 25, 1917.

No. 10. — N. Y., N. H. & H. R.R., Midland Division — Proposed South Boston Cut Improvement — Site Plan, Gold St., Scales: Hor. 1"=20'; Ver. 1"=8' — April 17, 1916, with yellow date of Sept. 15, 1916.

No. 11. — N. Y., N. H. & H. R.R., Midland Division — Proposed South Boston Cut Improvement — Site Plan, West Fifth St., Scales: Hor. 1"=20'; Ver. 1"=8' — April 22, 1916, with yellow date of May 25, 1917.

No. 12. — N. Y., N. H. & H. R.R., Midland Division — Proposed South Boston Cut Improvement — Site Plan, West Sixth St., Scales: Hor. 1"=20'; Ver. 1"=8' — April 20, 1916, with yellow date of May 25, 1917.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

Petition of the New York, New Haven and Hartford Railroad Company for approval of alteration of crossing of highway and railroad in the town of Raynham.

It appearing, after notice and hearing, that the selectmen of the town of Raynham and the directors of the New York, New Haven and Hartford Railroad Company and of the Old Colony Railroad Company are of opinion that it is necessary for the security and convenience of the public that an alteration be made in the crossing of Bridge road and the tracks of the Old Colony railroad (New York, New Haven and Hartford Railroad Company, lessee) in the town of Raynham; that they are agreed upon the character of the alteration to be made, and that an instrument in writing specifying the manner and limits within which said alteration shall be made, the party by whom the work shall be done, the general method of construction and the apportionment of cost, has been duly executed by the chairman of the selectmen of the town of Raynham and by the presidents of the New York, New Haven and Hartford Railroad Company and the Old Colony Railroad Company, a copy of which agreement is as follows: —

AGREEMENT FOR ALTERATION OF HIGHWAY KNOWN AS BRIDGE ROAD WITH
THE RAILROAD OF THE OLD COLONY RAILROAD COMPANY IN THE
TOWN OF RAYNHAM, MASSACHUSETTS.

Whereas there is a certain highway in the town of Raynham, known as Bridge Road, which crosses the railroad of the Old Colony Railroad Company, leased to and operated by The New York, New Haven and Hartford Railroad Company, above the grade of said railroad, and the directors of said railroad companies and the selectmen of said town are of the opinion that it is necessary for the security and convenience of the public that an alteration shall be made in said crossing, by which the bridge over the railroad tracks shall be raised, and have agreed as to the alterations which shall be made;

Now, therefore, in pursuance of the provisions of the Acts of 1906, chapter 463, part 1, section 41, and acts in addition to and in amendment thereof, this agreement in writing is made and signed in behalf of said town by the chairman of the selectmen, thereunto duly authorized by the selectmen, and in behalf of the directors of said railroad companies, by their presidents, respectively, thereunto duly authorized by the directors, specifying the manner and limits within which the alterations shall be made, by whom the work shall be done, the general method of construction, and how the costs shall be borne.

Alterations.

The present bridge carrying Bridge Road over the tracks shall be raised approximately fifteen (15) inches. The approaches to the bridge shall be graded with binding gravel and shall descend, one westerly 4.67 feet in one hundred, and the other easterly 4.18 feet in one hundred, until the respective grades intersect the existing grades of the highway. The approaches shall be constructed wholly within the limits of the existing highway.

Plan.

The alterations hereinbefore described are shown upon a plan herewith, made a part of, and entitled "N. Y., N. H. & H. R. R.; Old Colony Division. Proposed raising of Bridge No. 17.08 & Change of Grade at Bridge Road. Raynham, Mass., Dec. 5, 1916."

Performance of the Work.

The New York, New Haven and Hartford Railroad Company shall furnish all material and do all the work necessary to accomplish the above described alterations.

Apportionment of Expense.

The total cost of the alterations as aforesaid, including the cost of any necessary hearings, expenses of the Public Service Commission and its necessary agents, and all damages, shall be paid by the New York, New Haven and Hartford Railroad Company.

Signed in behalf of the selectmen of Raynham, by the chairman thereunto duly authorized, and in behalf of the railroad companies by the presidents thereunto duly authorized.

SELECTMEN OF RAYNHAM,

By GEORGE B. LEONARD,
Chairman.

Witness:

WALTER A. HARLOW.

THE NEW YORK, NEW HAVEN AND HARTFORD
RAILROAD COMPANY,

By HOWARD ELLIOTT,
President.

THE OLD COLONY RAILROAD COMPANY,

By FAYETTE S. CURTIS,
President.

A true copy.

[Signed] F. A. FARNHAM.

It is

Ordered, That the approval of the Commission be hereby given to the agreement and to the alteration therein set forth as necessary for the convenience and security of the public.

Attest: ANDREW A. HIGHLANDS,

APRIL 27, 1917. [P. S. C. 1720]

Secretary.

EXPRESS — STREET RAILWAY.

Petition of the Worcester and Webster Street Railway Company, the Webster and Dudley Street Railway Company and the Worcester Consolidated Street Railway Company, lessee of the Webster and Dudley Street Railway Company, that said companies be required to act as common carriers of newspapers, baggage, express matter and freight in the town of Webster.

This petition is brought under the provisions of section 1 of chapter 402 of the Acts of 1907, which reads as follows: —

A street railway company may become a common carrier of newspapers, baggage, express matter and freight in such cases, upon such parts of its railway, and to such extent, in any city or town, as, after public notice and a hearing, upon the petition of any interested party, the board of aldermen or the selectmen in such city or town and the board of railroad commissioners shall by order approve. If the board of aldermen or selectmen to whom such a petition is presented act adversely thereon or fail to act within sixty days from the date of the filing of such petition the petitioner or any interested party may file such petition with the board of railroad commissioners, who shall after public notice and a hearing determine whether public necessity and convenience require the granting of such petition and shall make an order dismissing such petition or requiring any street railway company named in such petition to act as such common carrier in such cases, upon such parts of its railway and to such extent, and under such regulations and restrictions, as in the opinion of said railroad commissioners, public necessity and convenience require. Any street railway company acting under authority hereof shall be subject to such regulations and restrictions as may from time to time be made by the local authorities aforesaid, with the approval of the railroad commissioners, and shall also be subject to the provisions of all laws now or hereafter in force relating to common carriers so far as they shall be consistent herewith and with said regulations and restrictions. The authority conferred upon any street railway company by virtue of the provisions of this act may at any time be revoked or terminated in any city or town or upon any part of its railway, by the board of aldermen or selectmen with the approval of the board of railroad commissioners.

The petitioners in this case originally filed a petition with the selectmen of Webster for permission to act as common carriers of

newspapers, baggage, express matter and freight in the town of Webster, and that petition was acted upon adversely. They now petition this commission for the authority under the provisions of the statute above quoted.

It appeared at a hearing that the demand for this service was largely from individuals and concerns located on parts of the street railway system outside the limits of the town. The remonstrants, among whom were the town counsel of Webster and representatives of several local business concerns, based their opposition largely upon the ground that no provision had been made for a freight station and that delivery of shipments from the cars in the streets would cause congestion of traffic and be a menace to public safety. The petitioners have since made plans and secured an option upon a site for a freight delivery station at a convenient point in Webster. This would seem to remove the most tangible cause of objection, and it is within the power of the local municipal authorities, if deemed necessary, to adopt regulations, subject to the approval of this commission, further to restrict and safeguard the operation of cars in the streets.

The petitioners now have these rights in almost all the cities and towns through which they operate, and the system as a whole operates over 476 miles of track in about 40 cities and towns in central Massachusetts. They now ask for permission for such operation in the town of Webster in order to give other communities located upon their system opportunity to ship by this method of transportation to Webster, an advantage which would seem to be very desirable to shippers and the general public in the town of Webster.

The Commission on the Cost of Living in its report to His Excellency the Governor this year (Senate Document 327) pointed to the fact that the development of our trolley freight service has been slow and urged the great advantage of the opportunity for the advancement of Massachusetts industries and trade by this means. This commission, within a year, in authorizing the operation of two-car trains for the carriage of trolley baggage, express matter and freight upon the lines of the Boston Elevated railway and Bay State street railway systems said (4th Rep. P. S. C. p. 311): —

. . . Street railway companies are organized primarily for the purpose of transporting passengers upon the public streets and highways and the proper performance of this service is their first and principal duty. Their tracks, power plants and other property, however, are used to capacity

in the passenger service, if at all, only at certain hours of the day and at other times are used very little. Other things being equal, if this property can be used at such times for the carriage of express and freight, the advantage is obvious. The companies gain through the enhanced revenues which they receive; the public gains, directly, through the additional service provided and, indirectly, through the increased prosperity of the companies. In order that the companies may be in the best possible position to furnish first-class passenger service at rates favorable to the public, it is of the utmost importance that they should utilize every opportunity to secure additional income from other sources. For these reasons the Commission believes that the development of trolley freight and express service ought to be encouraged.

The petitioners already have the facilities for performing this service in the way of tracks, cars and other appliances which represent a large investment, and with a freight station and necessary side tracks the additional service can be performed without inconvenience to regular passenger business.

In view of all the circumstances and conditions in this case the Commission is of the opinion that public necessity and convenience require the granting of the petition and that the petitioners should be required to act as common carriers of newspapers, baggage, express matter and freight in the town of Webster.

It is, therefore,

Ordered, That the Commission hereby certify that the public convenience and necessity require the granting of this petition, and therefore that the Worcester and Webster Street Railway Company, the Webster and Dudley Street Railway Company and the Worcester Consolidated Street Railway Company, lessee of the Webster and Dudley Street Railway Company, be required to act as common carriers upon their railways in the town of Webster, to the extent of receiving, carrying and delivering such newspapers, baggage, express matter and freight described in the schedule on file with the petition as is usually transported by express companies, restricted to exclude besides explosives all articles and commodities the transportation of which may be hereafter prohibited by the Commission.

This order is made subject to the following regulations and restrictions: —

1. The companies shall receive and deliver baggage, express matter and freight at suitable places or stations, and without discrimination or favor to any person or corporation.

2. All baggage, express matter and freight shall be transported in suitable cars, to be provided with proper fenders, brakes and safety appliances, and to be run at no time at a higher rate of speed than that at which the companies operate passenger cars.

3. The exercise of the authority herein granted shall in no way alter or abridge the duties and obligations of the companies relative to the transportation of passengers, nor in any way interfere with the conduct of the passenger service.

4. The companies shall be subject to such further regulations and restrictions as shall be lawfully made from time to time.

5. The authority herein granted is given upon the express condition that it shall not operate in any way to enhance the value of the assets of the companies in the event of a purchase of the railway property by the municipality or state.

6. The requirement herein imposed upon said companies to act as such common carriers is made without prejudice to any limitations that may hereafter be imposed by, or under authority of, the general court with respect to the extent to which, or the period during which, or the manner in which, said companies shall so act, and upon condition that no contractual relation is hereby created between said companies and the Commonwealth by which said companies receive or can claim any vested or permanent right, superior to the power of the Commonwealth to terminate the same, to act as common carriers of newspapers, baggage, express matter and freight in Webster.

Attest:

ANDREW A. HIGHLANDS,

AUGUST 24, 1917. [P. S. C. 1272]

Secretary.

EXPRESS TRANSPORTATION.

Petitions of Davenport's Express Company for recommendation relative to transportation of express matter between Boston and Rockland and of Gale's Plymouth and Boston Express for similar privileges between Boston and Plymouth on passenger trains of the New York, New Haven and Hartford Railroad Company.

These petitions are brought under the provisions of section 197, Part II, chapter 463 of the Acts of 1906, seeking to obtain the recommendation of the Public Service Commission to conduct a local express business in cars on passenger trains of the New York, New Haven and Hartford Railroad Company between Boston and Rockland and Boston and Plymouth respectively. As the considerations applicable are the same in both cases, they will most conveniently be considered together.

The right of engaging in the local express business on railroad trains is restricted by the statute to persons who obtain the recommendation of the Public Service Commission. In giving such recommendation the Commission is required by the statute to have "regard among other considerations to the public interest." Certain general observations seem to be pertinent in this connection. "This recommendation must be based upon something more than proof of the good character and ability of the applicant and the benefits supposed to arise from competition." (Lewellyn's case, R.R. Com. Rep., 1902, p. 92.) The desire of the applicant to engage in the express business as an occupation or means of livelihood will not of itself justify the Commission in giving him its recommendation. It would seem to be more in consonance with the general purpose of the statute that the petition should originate as a rule directly or indirectly with the public, induced by its own needs, rather than with the expressman desiring the privilege for himself. If brought by the latter, however, it should appear that the application also has the support of the public for reasons of public convenience and necessity affecting the particular communities to be served, as shown by some form of supplementary petition or by appropriate evidence. (See Railroad Express Service, R.R. Com. Rep., 1896, p. 136.)

It appears that in both Rockland and Plymouth competitive express service is now furnished by the Adams Express Company as well as by a local express company in each town. In the case of Davenport's Express Company no evidence was offered in support of the petition except the testimony of the proprietor of the company. In the case of Gale's Plymouth and Boston Express, certain letters were submitted by residents of Plymouth, alleging that the petitioner would be enabled to furnish a more expeditious service if the petition were granted. No claim, however, was made that the petitioner would furnish better service or would charge lower rates than the companies already in the field, or that these companies did not furnish adequate express service and facilities to the residents of Plymouth. The remonstrants submitted petitions signed by persons residing and doing business in Plymouth who alleged that the existing service was prompt and satisfactory, and that there was no need of an additional express company.

Independently of any question of the adequacy of the present express service furnished these communities by the two competitive companies already serving them, there are certain other important considerations, arising out of the present unsatisfactory condition of railroad passenger transportation on this railroad, which in the opinion of the Commission, have an important bearing upon the disposition to be made of these cases. The only question for our determination is that of the predominant public necessity. Passenger trains are provided for the transportation primarily of passengers and their baggage. The express business on passenger trains must in a degree be subordinate to the passenger business, and it is manifestly important in arranging for the express business to interfere as little as possible with the convenience of passengers. Passenger trains are not scheduled for handling express matter. The baggage and mail take precedence of express in unloading. The rule of the railroad company requires that the express matter must be handled during the regular station stop allowed for discharging and taking on passengers, baggage and mail. Great difficulty is often experienced in securing compliance with this rule in train operation. Express matter must be received and handled at passenger stations, and commonly must be loaded and trucked to and from the baggage cars by the different express carriers along the same platforms used by passengers in taking and leaving their trains, and train delays are frequently caused in loading and unloading.

In consequence of many serious complaints, an investigation was made and hearings were held recently by the Commission concerning the generally unsatisfactory character, largely due to train delays, of the passenger service furnished over its entire system in this commonwealth by the New York, New Haven and Hartford Railroad Company. From the facts disclosed it appeared that one of the many causes contributing materially to train delays was the heavy increase in the parcel post business, which is largely handled on passenger trains, and the similar increase in express business, making station delays due to the loading and unloading of express parcels very frequent. The Commission found that the annoyance, embarrassment and actual loss to the community from train delays is very great, and in its report made in December last on this investigation, among other recommendations, urged upon the railroad company that "it is also important that attention should be paid to the question of station delays incident to the express and parcel post business, and that every effort should be made to handle this business in such a way that these delays, which are now very frequent, may be minimized." Any addition to the number of expressmen on passenger trains under the present unsatisfactory conditions will have some tendency to cause greater delays and public inconvenience in passenger train operation.

In view of these considerations and as it appears that a reasonably adequate express service is now furnished to the residents of the towns of Rockland and Plymouth, the Commission finds that sufficient cause has not been shown to warrant its recommending the installation of the proposed service.

It is, therefore,

Ordered, That the petitions be dismissed.

Attest: ANDREW A. HIGHLANDS,
APRIL 23, 1917. [P. S. C. 1334, 1386] *Secretary.*

Petition of A. G. Pollard Company and other merchants of Lowell that the Boston & Lowell, Manchester & Concord Express Company be authorized to do an express business on passenger trains on the Boston and Maine railroad between Boston and Lowell.

This is a petition of certain merchants of Lowell that the Boston & Lowell, Manchester & Concord Express Company be authorized to conduct a local express business upon passenger

trains of the Boston and Maine Railroad between Boston and Lowell. Almost all of the larger business houses of the latter city are represented among the petitioners and the Lowell Board of Trade, through its secretary, was also heard in support of the petition at a public hearing.

Sections 196 and 197 of Part II of chapter 463 of the Acts of 1906 authorize the conduct of an express business upon the cars of railroad corporations by persons who obtain the recommendation of this Commission. The statute requires that this recommendation be given only after notice to all parties interested and a public hearing, and the Commission is to act "with regard, among other considerations, to the public interest." As has been emphasized in the disposition of other similar cases, the Commission must primarily determine the need of additional express service, and no considerations of the reliability of the express company seeking the privilege nor the possibility of the expansion of its business would be sufficient to entitle it to the recommendation of the Commission if the communities to be served already have adequate service. Passenger trains are operated for the expeditious and convenient carriage of passengers, baggage and mail and should be employed to carry express only to such extent as public necessity and convenience require.

The burden imposed upon the petitioners in every case to establish the need of additional express service has here been sustained. The petitioners, representatives of divers business activities in the city of Lowell, interested only to secure the general public welfare, have furnished evidence that the present express service in that city is inadequate. There is now but one company, the American Express Company, having express privileges upon the passenger trains of the Boston and Maine Railroad from Boston to Lowell, while in the greater number of larger municipalities served by the Boston and Maine in Massachusetts passenger train privileges have been accorded to at least one local express company in addition to the American Express service. The Boston & Lowell, Manchester & Concord Express Company now employs five teams and two automobile trucks in its Lowell business, and during the month of January, 1917, handled 622,488 pounds of merchandise by freight to and from Boston and Lowell. The ability of the company to give increased service to the people of Lowell, if granted passenger train facilities, is indicated by the evidence as to its method of segregation of collections of Lowell express in Boston to insure

prompt shipment and of its expeditious delivery at Lowell at lower rates than those received by its principal competitor.

After consideration of all the evidence the Commission is of the opinion that the public interest requires that the recommendation defined in the statute be given to this company, in order that additional express service be given to the people of Lowell, and, without undertaking to designate the trains upon which such privileges are to be enjoyed, is of the opinion that facilities for the carriage of express be afforded on at least one passenger train in each direction daily.

It is, therefore

Ordered, That the Commission, as provided in section 197 of Part II of chapter 463 of the Acts of 1906, recommend that the said Boston & Lowell, Manchester & Concord Express Company be permitted to engage in a local express business for the forwarding of express matter between the cities of Boston and Lowell in trains and cars of the Boston and Maine Railroad.

By the Commission,

ANDREW A. HIGHLANDS,

JUNE 15, 1917. [P. S. C. 1703]

Secretary.

INVESTIGATIONS.

Investigation by the Commission Relative to Emergency Tools and Appliances on Railroad Trains and Cars.

Under the provisions of section 168 of part II of chapter 463 of the Acts of 1906, every railroad corporation was required to equip its trains and passenger cars with a specified list of tools for use in case of accident. In its annual report to the General Court for the year 1916, submitted in January, 1917, this Commission called attention to the fact that some of the tools required by the statute were inadequate or unsuitable for use in connection with the steel equipment now being introduced, and recommended that the above cited section be amended so that the Commission should have power to modify the list of tools to be carried in the case of cars of steel construction. Upon this recommendation, chapter 41 of the General Acts of 1917 was enacted, as follows:—

Section one hundred and sixty-eight of Part II of chapter four hundred and sixty-three of the Acts of the year nineteen hundred and six is hereby amended by striking out the words "board of railroad commissioners", in the thirteenth line, and inserting in place thereof the words:— public service commission,— and by inserting after the word "car", in the fifteenth line, the words:— *provided, however*, that said commission may require trains or cars to be equipped with other tools in substitution for, or in addition to, those above prescribed,— so as to read as follows:— *Section 168.* Every railroad corporation shall equip each of its trains, for use in case of accident, with two car replacers, two jack screws, two crowbars, one pinch bar, one claw bar, one spike hammer, two sharp axes, and ropes or chains suitable for hauling cars; and shall also equip each car of every passenger train which is owned or regularly used by it, including mail and baggage cars, with two sets of tools, consisting of an axe, a sledge hammer, a crowbar, handsaw and pail, which shall be maintained in good condition, and one set of which shall be kept upon the inside and the other upon the outside of every such car, in a convenient place and in a manner approved by the public service commission; but one set shall be sufficient if so placed as to be accessible both from the inside and outside of such car: *provided, however*, that said commission may require trains or cars to be equipped with other tools in

substitution for, or in addition to, those above prescribed. A corporation which violates the provisions of this section shall forfeit five hundred dollars. [Approved March 1, 1917.]

Empowered by the statute to require equipment of train tools, the Commission has, during its consideration of this matter, given public hearings, held conferences with representatives of the railroads and of the railroad employees, and now prescribes the following regulations: —

REGULATIONS RELATIVE TO EMERGENCY TOOLS AND APPLIANCES ON
RAILROAD TRAINS AND CARS.

Every railroad corporation shall equip each of its trains, for use in case of accident, with: —

Train Tools.

Two car replacers.

Two lifting jacks 24 inches or more in height and not less than 25 tons capacity each, the type to be approved by the Commission.

Two steel crowbars.

One steel pinch bar.

One steel claw bar.

One spike hammer — weight not less than 8 pounds.

Two sharp steel axes.

One wire cable, or chains suitable for hauling cars.

One steel drift, suitable for removing rivets.

One water pail and one fire extinguisher to be kept in all freight cabooses.

Equipment for first aid to injured persons.

Every railroad corporation shall also equip each car of every passenger train which is owned or regularly used by it, including mail, milk and baggage cars, for use in case of accident, with: —

Tools for Wooden Passenger Coaches, Mail, Milk and Baggage Cars.

One sharp steel axe.

One steel or wrought iron sledge hammer — weight not less than 5 pounds.

One steel crowbar not less than 30 inches in length.

One steel saw.

One water pail.

Tools for Steel Passenger Coaches, Mail, Milk and Baggage Cars.

One sharp steel axe.

One steel or wrought iron sledge hammer — weight not less than 5 pounds.

One cold chisel not less than 30 inches in length and three-fourths of an inch in diameter.

One saw suitable for cutting steel.

One water pail.

Every railroad corporation shall require periodic inspection of all train and car tools and appliances to make certain they are in place and in good working order.

The installation of the above mentioned tools and appliances shall begin forthwith, be prosecuted with diligence and completed at a date not later than January 1, 1919, and the corporations affected are hereby requested to file quarterly statements of the progress of the work.

By the Commission,

ANDREW A. HIGHLANDS,

OCTOBER 30, 1917.

[P. S. C. 1752]

Secretary.

RAILROAD ACCIDENTS.

Investigation of accident on the Boston, Revere Beach and Lynn Railroad in Winthrop, July 10, 1917.

JULY 25, 1917.

Public Service Commission, Hon. FREDERICK J. MACLEOD, Chairman.

GENTLEMEN:— I beg to submit the following report of an accident which occurred on the Boston, Revere Beach and Lynn railroad at Battery Junction at about 8.30 A.M., Tuesday, July 10th, 1917. The accident was promptly investigated by Henry W. Seward, railroad inspector, Thomas Laffey, equipment inspector, and Wm. J. Keefe, assistant signal engineer. The investigation shows that passenger train No. 21, consisting of an engine and six cars, westbound, left Ingalls station at about 8.28 A.M., and while passing Battery Junction was derailed. This accident resulted in the death of a passenger, who was standing upon the platform of a car at the time, and, undoubtedly, when the car tipped to an angle of about 45 degrees, either fell or jumped to the ground. Several other passengers were more or less injured.

The roadbed, track and equipment were found to be in good condition and in no way contributed to this accident.

The towerman, in charge of the tower, had been in the employ of the company as such for eleven years and was on duty at the time. In the tower with him was an employee of the company for the purpose of receiving instructions relative to the operation of switches and signals at that point. This employee's previous experience in tower work had been only two and one-half weeks, obtained at the Orient Heights tower. It appears that the towerman, in charge of the interlocking plant, had, previous to the arrival of train No. 21, placed the signals and switches in proper position for the safe passage of the train. It further

appears that, while train No. 21 was passing this junction, the inexperienced employee, without instructions from the towerman, placed several levers controlling this route in the normal position, of which one locked the movable point frogs, and when the train had partially passed over these frogs he operated this lever which resulted in the derailment of the train. The department is of the opinion that this inexperienced man did not receive proper instructions at the Battery Junction tower regarding the duties of a towerman, but was left to observe and work things out in his own way.

This interlocking plant is of a mechanical type, and was installed in 1902, and was at that time in accordance with the recognized standards and best practices of the day. It is of a type which is still in general use throughout the state and country. Since that time, however, electrical appliances have been devised that are an additional safeguard for such interlocking plants. These are gradually being added on the railroads within the Commonwealth as the interlocking plants are remodelled or rebuilt. The initial cost of installation is high.

The attention of the officials of this railroad was called some time ago by this department to the existing conditions at Battery Junction, and steps were being taken to add these electrical appliances, which were partially completed when this derailment occurred. This department has been assured by the officials of the Boston, Revere Beach and Lynn Railroad that the work already started at Battery Junction will be carried forward to completion at the earliest possible date.

Respectfully submitted,

GEORGE W. BISHOP,

[P. S. C. 1579]

Chief of Inspection Department.

Investigation of accident on the New York, New Haven and Hartford railroad near Dorchester station, December 28, 1916.

FEBRUARY 1, 1917.

Public Service Commission, Hon. FREDERICK J. MACLEOD, Chairman.

GENTLEMEN: — I beg to submit the following report based on information secured during the investigation of a side-swipe collision which occurred near the Dorchester station on the Mid-

land division of the New York, New Haven and Hartford railroad at 6.25 P.M. on December 28, 1916: —

Passenger train No. 7075 originates in Boston and terminates at Dorchester. On the evening of the accident, it left Boston at 5.57 P.M. and arrived at Dorchester at 6.17 P.M., being on time. After unloading the passengers, the train proceeded on the outward, or No. 1 track for a distance of about 1,200 feet to the west end of the middle siding for the purpose of making up the train for a return trip to Boston. The switching movements to accomplish this purpose require the backing of the train upon the middle siding, detaching the engine and moving it westerly to clear the cross-over switch leading to the inward or No. 2 track, thence proceeding to a trailing switch near the Dorchester station, where it would enter the east end of the middle siding, and, after being attached to the train, would be in readiness to begin its journey.

Freight train BH-1, known as "The Cannon Ball", running from Boston to New York, is not a scheduled train, but is supposed to leave Boston about 5.55 P.M., and on the evening of the accident passed Dorchester at about 6.25 P.M. On engine No. 356, which was drawing this train, were the engineer, fireman and head brakeman. As the train approached block signal No. 11, located near Talbot avenue easterly of Dorchester station, the signal was observed to be at danger. Before passing it, however, it cleared, and as the train passed around the curve, permissive signal No. 4 was found in a proceed position, which indicated to the crew that the block was clear. The train continued its course to the west end of the middle siding and there side-swiped engine No. 801 which had fouled the No. 1 track. This collision resulted in over-turning both locomotives. The engine of BH-1 train rolled over the embankment, causing the death of the engineer and injuries to other employees. I am unable to find that the crew of train BH-1 was in any way responsible for the accident.

When train No. 7075 reached Dorchester, the conductor remained at the station for the purpose of protecting the train during the switching movements. He proceeded to the tower from which the permissive signal, protecting track No. 1, and the switch were controlled. He placed the permissive signal in stop position and unlocked the switch leading to the west end of the middle siding. The crew then threw the switch and proceeded to make up the train. When the train had passed from No. 1

track to the middle siding and the switch had been thrown back to track No. 1, the conductor locked the switch and cleared the signal, thus leaving track No. 1 unprotected. The arrangement of the tracks at the west end of the turnout was such as to necessitate engine 801 fouling No. 1 track when it took the cross-over from the middle track to No. 2 track, and it was at this point, without protection, that the accident occurred.

The conductor of No. 7075 had been in railroad service for about 25 years, had served as conductor nearly eight years and was presumably qualified to fill the position. It is his claim, however, that he was not familiar with the conditions existing at the west end of the middle track and he thought that when the train was on the middle track it could make the remaining movements without fouling the outward track, therefore he cleared the signal protecting No. 1 track.

The following is quoted from the "Rules and Regulations of the Operating Department" of the New York, New Haven and Hartford Railroad Company: —

GENERAL RULES FOR CONDUCTORS.

976. They will have charge of the trains to which they are assigned and all employees thereon.

977. They will be responsible for the movement, safety and proper care of their respective trains in strict accordance with the rules, special instructions and orders and for the faithful and prompt performance of duties of trainmen.

991. They will be responsible for all switching movements. All cars on sidings or side tracks must be left in safe order with full clearance from main tracks, hand brakes set and derailing devices set to derail.

The above rules would indicate that the responsibility for providing proper protection during the switching movements of this train rested upon the conductor.

The flagman of train No. 7075 was on the rear car when the train backed onto the middle track, and when the train stopped, he stepped off upon track No. 1 to protect the train during the switching movements.

The flagman admits that he knew it was necessary to foul track No. 1 when the engine was moving from the rear end of the track to track No. 2. I am unable to learn that he was recalled by either the conductor or engineer, but when the permissive signal was cleared by the conductor he assumed that track No. 1 was clear and he ceased to protect it. This resulted in removing all protection for switching movements at the west

end of the turnout and the collision followed. The assumption on the part of the flagman proved to be a fatal error.

The trainman who threw the switch leading from track No. 1 to the middle siding admits that he knew the permissive signal could not be cleared while the switch was set on the middle siding and that if he had left it in that position proper protection would have been provided while the engine was fouling No. 1 track. He assumed that the conductor and flagman were protecting the train, so he threw the switch and set up track No. 1. While I do not find that setting the switch was a violation of rules, I do find that his assumption was wrong, and the result may well be considered a contribution toward this accident.

The fireman of engine No. 801 admits that he knew it was necessary to foul No. 1 track when the engine of train No. 7075 was in position to take the cross-over leading from the center track to track No. 2 and that he had on several occasions held a red light out of the cab window to notify the flagman on track No. 1 that this movement was being made. The rules of the company did not require him to do so, and on the evening of the accident he did not display a red light. The fireman stated that he and the engineer had talked over the conditions existing at the west end of the turnout, and the engineer thought that the switch ought to be left for the siding when they were pulling out on the main line. The engineer of engine No. 801, drawing train No. 7075, stated: —

After the engine was cut off I rode up over the middle switch on the turnout, fouling main track No. 1, but understood at the time that I was being protected by a flagman and signals. I have never fouled the main track, as far as I know, without being protected.

The management of the New York, New Haven and Hartford Railroad Company concedes that in 1909 the cross-over track from the middle siding to track No. 2 was moved west to lengthen the middle track and the change resulted in placing the point of the switch so near to track No. 1 that in changing engines from the west end to the east end of trains it was necessary to foul track No. 1. This condition was well known to the official of the company who created it and this condition of affairs has been tolerated since that time. I consider the layout of tracks at the west end of the middle siding bad, and well calculated to ensnare employees not familiar with conditions existing there, as well as those who appear to be willing to take chances from time to time.

I am informed that the present officials of this division of the railroad decided, early in June, 1916, to change these conditions, and the recommendation to do this work was authorized last August, but the change was not begun until after the accident occurred. The amount of work necessary to make this change is very little and the cost of it would have been small if the work had been done seasonably. The change has now been made. The delay in carrying this recommendation into effect proved to be most unfortunate.

The facts obtained during the investigation of this accident are not in accord with the slogan "Safety first" and should serve as an object lesson to both the management and the employees of the New York, New Haven and Hartford Railroad Company. The management should at once make a thorough examination of the location of its tracks and if like or similar conditions to those existing at the scene of the accident are found, such defects should be corrected without delay. The members of the train crews should familiarize themselves with the rules and regulations governing the operation of their trains, as well as with conditions existing on the portion of the lines over which they are assigned to duty. Trains should be operated in accordance with specified rules and regulations rather than by assumptions or a mixture of rules and assumptions. The co-operation of the management of this company and its employees is absolutely necessary, not only to avoid a further undesirable record, but also to prevent such an unnecessary sacrifice of life and destruction of property as occurred in this case.

Respectfully submitted,

GEORGE W. BISHOP,
Chief of Inspection Department.

[P. S. C. 1579]

STREET RAILWAY ACCIDENTS.

Investigation of accident to car on the Boston Elevated railway in Boston, August 30, 1917.

NOVEMBER 2, 1917.

Public Service Commission, Hon. FREDERICK J. MACLEOD, Chairman.

GENTLEMEN: — I beg to submit the following report concerning an accident which occurred on the Boston Elevated railway on the Elevated structure in front of the North Station of the

Boston and Maine Railroad at about 5.25 P.M. on August 30, 1917.

The train involved in this accident consisted of two cars, Nos. 029 and 044, and was en route from the South to the North Station. As it approached the North Station and the motorman made an application of the brakes, the brake on the forward car, No. 029, failed to work, leaving the braking power of the train entirely with the rear car, No. 044. This proved to be inadequate to make the usual stop and the train proceeded to the end of the track where it collided with the bunting post, which brought it to a stop. Had the bunting post failed, the train probably would have taken a plunge to the street below.

Upon investigation of the trucks and brake rigging on car 029, it was found that the trucks were in reasonably good condition. The brake rigging was out of adjustment due to the anchor bolt to dead lever on the rear truck having worked out of place. This, when the brake was applied, allowed the live lever, which is connected to a pull rod and piston lever, to pull forward and cut off the main trolley wire to contact shoes, causing a short circuit which blew the fuse on the head shoe beam and put the electric equipment on the front end of the train out of working order. Apparently, the electric and pneumatic brakes were in good working condition up to the time that the brake was applied and the anchor bolt to dead lever worked out of place.

It is the claim of the management of the company that these cars were inspected on August 29th, the day previous to the accident, and that there were no loose bolts at that time on car 029. From the fact that this bolt dropped from the equipment so soon after the inspection, it seems reasonable to suppose that the inspection was not a thorough one. There is no evidence to show that the train was not being properly operated, and if the brake had not failed, the train would have been brought to a stop at its usual place.

The question now arises, what precautions may be adopted to prevent a recurrence of this or similar accidents. The Boston Elevated Railway Company has already equipped 500 or more of its double truck surface cars with safety stops to hold the brake cylinder lever so that the remaining available piston travel can be used to apply the brakes. This will result in retaining on each car about 50 per cent of its braking capacity in case there is a brake failure on one set of its trucks. Since this accident the department has made tests of this device, applied to cars Nos. 5349 and 555 of the Boston Elevated Railway Company, and car No.

162 of the Berkshire Street Railway Company with the following results:

The cars tested were brought to an estimated speed of over 15 miles per hour when the power was shut off and an emergency application of the brakes made, the cars being brought to a stop in the shortest distance possible. Except in test No. 1, the rails were sanded and in good condition for making a quick stop. Tests were first made with brakes working on both trucks and then with the brake rigging disconnected on one truck. Tests were also made with the brakes adjusted so that there was an unusually long piston travel.

Tests at Salem Street Car House, Medford.

Car No. 5349.

Test.	BRAKE CONDITION.	Piston Travel while Standing (Inches).	Distance in which Stop was made (Feet).
1	All working,	3½	80
2	All working,	3½	43
3	All working,	3½	48
4	All working,	3½	50
5	Forward truck disconnected,	8¾	112
6	Forward truck disconnected,	8¾	114
7	Rear truck disconnected,	7¼	94
8	Rear truck disconnected,	7¼	90
9	Rear truck disconnected,	10	105

Car No. 555.

10	All working,	6¼	47
11	All working,	6¼	45
12	Motor truck disconnected,	9¼	85
13	Light truck disconnected,	8	81
14	Light truck disconnected,	10	96

NOTE. — The light truck was on the forward end.

In test No. 13 the piston travel was found to be 9½ inches when the car came to a stop and in test No. 14 it was 11 inches. This extra piston travel was due to the lost motion in the brake rigging and the truck frames.

On the 24th ultimo at the East street car house of the Berkshire Street Railway Company at Pittsfield, tests similar to the

above were made on car No. 162. This car is a combination passenger and baggage, weighing about $23\frac{1}{2}$ tons, and is used on the Lee-Huntington line. It was equipped with four G. E. 80 motors (40 H. P. each) and straight air brakes. The brake cylinder was 10 x 12 inches and the main levers 27 inches long. The levers were supported by carriers placed about 24 inches from the centre of the cylinder. This car was equipped with stops similar to those on the Boston Elevated railway cars noted above, the principal difference being that they were nearer the end of the levers. The levers and other parts of the brake rigging on this car were heavy and the ends of all pull rods were boxed over levers so that they would hold in place in case a pin should become broken or lost. This car was equipped with hand brakes entirely independent of the air brakes, the shoes of the former being hung on the outside and those of the latter on the inside of the trucks. The length of this car, over all, was 47 feet and it had steel wheels. The following are the results of tests on car No. 162:—

Test.	BRAKE CONDITION.	Piston Travel while Standing (Inches).	Distance in which Stop was made (Feet).
1	All working,	4	70
2	All working,	4	60
3	All working,	4	60
4	Rear truck disconnected,	$6\frac{3}{4}$	76
5	Rear truck disconnected,	$6\frac{3}{4}$	70
6	Forward truck disconnected,	6	77
7	Forward truck disconnected,	6	75

The piston travel was found to be about $\frac{1}{4}$ of an inch more when the car came to a stop after tests than when standing still before a test was made.

I am of the opinion that if this device had been applied to cars 029 and 044 the braking power on the rear car plus that on one-half of the forward car would probably have prevented this accident. Therefore, I recommend that all new double truck cars hereafter purchased for street railway use, both for surface and elevated lines, be equipped with safety stops, like or similar to those tested, and that all double truck cars now in use, which are in suitable condition for the installation of safety stops, and those hereafter receiving substantial repairs be thus equipped, so

that eventually all double truck cars operating in this commonwealth will be provided with safety stops for the purpose of retaining all the braking power possible.

Respectfully submitted,

[P. S. C. 1579—O]

GEORGE W. BISHOP,
Chief of Inspection Department.

Circular.

NOVEMBER 10, 1917.

To the Street Railway Companies of Massachusetts.

Your attention is called to the accompanying report made to the Commission by its Inspection Department with respect to an accident which occurred on the Boston Elevated railway on August 30, 1917. The Commission concurs in the recommendations, — applicable not only to the Boston Elevated Railway Company but to all street railway companies in the commonwealth, — which are made in the final paragraph of this report. Full information in regard to the safety devices in question may be obtained from the Inspection Department. The companies are requested to take the matter up at once and to communicate with the Commission, as soon as practicable, stating definitely the action which they are prepared to take.

By the Commission,

[P. S. C. 1549—J]

ANDREW A. HIGHLANDS,
Secretary.

Investigation of accident on the Worcester Consolidated Street Railway at Leicester, October 8, 1917.

NOVEMBER 12, 1917.

Public Service Commission, Hon. FREDERICK J. MACLEOD, Chairman.

GENTLEMEN: — I beg to submit the following report with reference to a head-on collision of cars which occurred about 6.08 P.M., October 8, 1917, on the Spencer line of the Worcester Consolidated street railway in Main street near Reservoir street in the town of Leicester.

The cars involved in this collision were two double truck, semi-convertible, pay-as-you-enter, steel cars with anti-climbing

bunters, equipped with four G. E. 24-7-B motors, K-35-G-2 controllers, G. E. C. P. 27 air reservoirs, Standard 0.50 trucks with chilled wheels, arc head lights and Murphy sand boxes; all of which, as nearly as can be ascertained, were in good working order. The accident resulted in the injury of fourteen passengers and two employees, together with considerable damage to the front ends of both cars.

This is a single track road from the Worcester and Leicester line to Spencer, a distance of about $8\frac{1}{2}$ miles. It has six turnouts at which non-counting semaphore block signals are installed, and may well be classified as a high speed trolley line having frequent service.

Car 481, bound from Worcester to Spencer, was in charge of a motorman who had been in the service of the company six or seven weeks and had made five round trips as a motorman on the Spencer line. He had about nine years of trolley experience as both conductor and motorman on several street railways. The conductor of the car had been in the employ of the company for about five years. He made his first trip in charge of a car on the Spencer line on Saturday, October 6th. Although he stated that he felt fully qualified to serve as a conductor, yet, owing to his unfamiliarity with this line, he testified that he had made objection to the official who assigned him to the duty of operating cars thereon with a motorman who he thought was not familiar with the road. He further claims that he was advised by an official of the company that he might as well go on and learn the road then as later, and therefore, having these instructions, he proceeded to make the trip. The management, however, does not admit that such objections were made by the conductor.

This line from the city hall to the Worcester and Leicester town line is double track, and nothing unusual in the operation of the car occurred until it reached the single track section, at which time the car was ten minutes late. At this point a telephone booth is located, and it is designated by a sign, "Turnout 56." Upon arriving at this point, the conductor and motorman went to the telephone booth and the conductor reported to the train dispatcher, "Callan and Robertson at the line." He received the following order: "One car at 56; call at 60." This was repeated to the motorman, who in turn repeated it to the dispatcher. The motorman stated that he did not realize that he was at turnout 56. He thought that the next turnout, which was, in fact, turnout 57, was turnout 56. Owing to this mis-

understanding, in which the conductor shared, he did not wait for a car at turnout 56 but proceeded towards turnout 57.

A signal is located about 200 feet beyond the end of the double track, which is supposed to indicate the conditions existing in the block between turnouts 56 and 57. The motorman claims to have received a proceed signal before he entered the block at turnout 56. When the approaching inbound car, No. 482, entered the block at turnout 57, the signal should have displayed a red light and a red semaphore at turnout 56, but the filament in the bulb behind the red lens at turnout 56 being broken, no red light was displayed at that point; however, a red semaphore appeared, but owing to darkness it was difficult to observe it. It was impossible to get a proceed or white light at turnout 56 when a car had entered the block from the turnout 57 end. With this type of signal all cars entering a block should receive a white light, which indicates "proceed".

Rule 389, found in the "Book of Rules and Regulations for the Government of Employees of the Worcester Consolidated Street Railway Company," reads as follows: —

Rule 389. Motormen and conductors will be held responsible for detection and careful interpretation of all signals while on the road.

Supplementary order No. 39, dated February 23, 1910, reads: —

When a car enters a block, and the trolley strikes the signal switch properly, the white or green light should be displayed at the entrance. Motormen must NEVER pass the signal until their car causes the white or green light to be displayed, unless they receive instructions to do so from some one in authority. If white or green light shows conductor will give motorman two bells before proceeding, and motorman will stop car if proper signal is not given.

When a car reaches a schedule passing point and there is no light displayed for the block ahead, they must wait five minutes after the scheduled leaving time from that turnout, and if a red light is not then displayed, they shall proceed until blocked by a red or white or green light, but they must be careful to notice that their car causes a white or green light to be displayed at the entrance to all blocks which they enter.

In this instance the motorman stated that he saw the white light go on, but did not receive two bells from the conductor to show mutual understanding of the signal, which was a violation of the rules. The conductor stated that he looked for the white light but did not see it, therefore he did not give the two bells.

However, he conceded that he allowed his car, without protest, to enter the block without having obtained the proper signals.

The records of the company show that inbound car No. 482 met an extra outbound car at turnout 57. This appears to be substantiated by the testimony of the conductor and motorman of the extra car. The conductor and motorman of car No. 482 stated positively that they did not meet the extra car at 57 but did meet it at 58. The crew of car 482 further testified that they received the signal to proceed at turnout 57 before they entered the block. Assuming this portion of their testimony to be correct, they were not in any way responsible for the collision.

The signals on this line were installed in 1902 and at that time were of the most improved type, but, owing to many improvements made since that time, this type is not now considered to be a desirable signal. The signals should be greatly improved or discarded in the near future. I find that there have been many failures of these signals recently and, apparently, repairs have not in many cases been promptly made. Several signal failures on this line have been observed by this department. While the management has a system for reporting defective signals and repairs made, the records are so incomplete as to be of little assistance in an investigation of this kind.

The evidence secured by this department during the investigation of this accident is convincing that conditions exist on the Worcester Consolidated street railway which should be corrected. There is a lack of instruction for conductors and motormen in the service of the company, and a lack of proper supervision and discipline necessary for the safe operation of the cars.

The management stated that the conductor of car 481 "bid off" this run, which, without doubt, is true; but no system which results in the assignment of employees to duty on lines with which they are not familiar and qualified to safely operate cars should be tolerated.

The dispatcher of cars on duty at the time of this accident stated that his duties were so numerous that he was not always able to complete an order for the movement of cars and make it a matter of record without interruption, so that at a subsequent time he made record of it as best his memory served him. The importance of car-dispatching is so great that when a specific movement of cars is to be made the transaction should be completed and properly recorded before any further attempt is made to move other cars by orders. No attempt should be made to

abbreviate orders given to motorman and conductors. For instance, the order received by the crew of car 481 was as follows: "One car at 56; call at 60." If the order had stated, "Meet one car at 56; proceed to 60 and call for orders," it would have been less liable to be misunderstood. The management stated that it did not rely upon its signal system to govern the movement of cars, but depended upon its telephone system for that purpose; that the signals were only an additional protection. I fail to see any justification for the installation of signals unless they are to be maintained in good working order, which does not appear to have been the case on this line.

In conclusion, I find a joint responsibility for this accident resting upon the motorman and conductor of car 481 and the management of the Worcester Consolidated Street Railway Company.

Respectfully submitted,

[P. S. C. 1579]

GEORGE W. BISHOP,
Chief of Inspection Department.

JOINT USE OF TRACKS.

Petition of the Bay State Street Railway Company for approval of rules and regulations governing operation of cars over private tracks of the Fore River Shipbuilding Corporation in Quincy.

After consideration, —

It is

Ordered, That the approval of the Commission, under the provisions of chapter 70, Acts of 1909, be given to the amended rules and regulations, dated June 4, 1917, to govern the operation of cars by the Bay State Street Railway Company in Quincy, as set out in an agreement between the Old Colony Street Railway Company (now the Bay State Street Railway Company) and the Fore River Shipbuilding Company, dated December 7, 1908, copies of which, with schedule, are on file in this office, upon the understanding that should a change in the schedule be desired, amended rules and regulations and a new schedule shall be filed with the Commission for its approval.

Attest: ANDREW A. HIGHLANDS,

JUNE 25, 1917. [P. S. C. 1796]

Secretary.

Orders similar to the above were issued on July 31, 1917, October 10, 1917, and November 19, 1917, approving amended rules and regulations dated June 26, 1917, October 8, 1917, and November 10, 1917, respectively.

Petition of the Bay State Street Railway Company and the Lowell and Fitchburg Street Railway Company for approval of agreement for joint use of tracks in Chelmsford and Lowell.

After notice and hearing and full consideration, — it is

Ordered, That the Commission hereby certify that the joint operation of cars over certain tracks of the Bay State Street Railway Company from Stevens Corner in the town of Chelmsford to Merrimack square in the city of Lowell, to the extent

and under the rules and regulations provided in an agreement executed by the Bay State Street Railway Company and the Lowell and Fitchburg Street Railway Company under date of December 12, 1916, a copy of which agreement is on file in this office, is consistent with the public safety.

Attest: ANDREW A. HIGHLANDS,
FEBRUARY 27, 1917. [P. S. C. 1629] Secretary.

Petition of the Milford and Uxbridge Street Railway Company for approval of supplemental agreement between the Milford and Uxbridge Street Railway Company and the Worcester Consolidated Street Railway Company for joint use of tracks in Uxbridge and Milford.

After notice and hearing and full consideration, —

It is

Ordered, That the Commission hereby certify that the joint operation of cars over certain tracks of the Worcester Consolidated and the Milford and Uxbridge street railway companies in the towns of Uxbridge and Milford to the extent and under the rules and regulations provided in an agreement executed by said companies under date of May 31, 1913, and approved by the Board of Railroad Commissioners under date of June 28, 1913, as supplemented and amended by a further agreement executed by said companies under date of March 1, 1917, a copy of which supplemental agreement is on file in this office, is consistent with the public safety.

Attest: ANDREW A. HIGHLANDS,
MAY 3, 1917. [P. S. C. 1711] Secretary.

Petition of the Bay State Street Railway Company and the Providence and Fall River Street Railway Company for approval of agreement for further continuance of joint use of tracks in Somerset and Fall River.

It appearing that in an order of the Commission dated March 21, 1917, approval was given to the joint use by the Providence and Fall River Street Railway Company and the Bay State Street Railway Company of certain tracks in the town of Somerset and the city of Fall River in accordance with certain agreements on file in this office; that by an indenture of June 30,

1917, said companies have further extended the terms of said agreements until July 1, 1918, —

It is

Ordered, That the approval heretofore given to said joint use of tracks under said agreements be continued until July 1, 1918.

Attest: ANDREW A. HIGHLANDS,

JULY 17, 1917. [P. S. C. 484]

Secretary.

Petition of the Providence and Fall River Street Railway Company and the Bay State Street Railway Company for approval of agreement for further continuance of joint use of tracks in Somerset and Fall River.

It appearing that in an order of the Commission dated May 10, 1916, approval was given, after notice and hearing, to the joint use by the Providence and Fall River Street Railway Company and the Bay State Street Railway Company of certain tracks in the town of Somerset and the city of Fall River in accordance with certain agreements on file in this office; that by an indenture dated October 25, 1916, said companies have further extended the terms of said agreements until July 1, 1917, —

It is

Ordered, That the approval given by the Commission in its order of May 10, 1916, to said joint use of tracks under said agreements be continued until July 1, 1917.

Attest: ANDREW A. HIGHLANDS,

MARCH 21, 1917. [P. S. C. 484]

Secretary.

RAILROAD LOCATIONS.

Petition of the Boston and Albany Railroad Company that the Commission prescribe the limits within which certain land in Chelsea may be taken for railroad purposes.

Upon the petition of the Boston and Albany Railroad Company, filed April 27, 1917, under the provisions of section 78 of Part II of chapter 463 of the Acts of 1906, as amended by chapter 157 of the General Acts of 1915, praying that the Public Service Commission prescribe the limits within which it may take certain land for railroad purposes in the city of Chelsea in the county of Suffolk in the commonwealth of Massachusetts, outside the limits of its route already fixed in said city, for the purpose of making or securing its railroad, or for depot or station purposes, or for one or more new tracks adjacent to other land occupied by it by a track or tracks already in use, due notice of the above petition and of the time and place of hearing thereon has been given to the owner or owners of said land and to other parties interested therein, in the manner prescribed by law and in accordance with the order of notice issued on said petition, and a hearing on said petition has been given on May 11, 1917, at which George H. Fernald, Jr., appeared for the petitioner and E. Philip Finn appeared for a certain landowner.

All persons appearing at the hearing held as aforesaid having been heard, and the subject matter of said petition having been duly considered, it is now determined and adjudged that the said Boston and Albany Railroad Company requires additional land in Chelsea for the purpose of making or securing its railroad, or for depot or station purposes, or for one or more new tracks adjacent to other land occupied by it by a track or tracks already in use, and is unable to obtain the same by agreement with the owner, and it is further determined, ordered and decreed that such land may be taken as by law provided within the following limits, to wit: —

A parcel of land situated in Chelsea, in the county of Suffolk and the commonwealth of Massachusetts, bounded and described as follows: —

Beginning at a point on the dividing line between land of Jacob Lipsitz and land of the Boston and Albany Railroad Company distant twenty-

eight (28) feet southwesterly from the base line of the location of the Grand Junction branch of the Boston and Albany railroad, measured at right angles thereto at station 89+03.30; thence running south 74° 56' 14" east true meridian by the southwesterly side line of the location of said Grand Junction branch about one hundred and twenty-one and twenty hundredths (121.20) feet to a corner of land of said railroad company on the southwesterly line of a strip of land forty (40) feet in width, formerly a paper street known as Elm street; thence turning and running south 37° 46' 44" east true meridian by the said southwesterly line of said strip of land formerly known as Elm street about sixty-seven (67) feet to a point distant sixty-eight and forty-seven hundredths (68.47) feet southwesterly from said base line measured at right angles thereto at station 87+28.70; thence turning and running northwestwardly by a line curving to the left with a radius of four hundred and ninety-one and fifty-six hundredths (491.56) feet about one hundred and seventy-nine and seventy-five hundredths (179.75) feet to the place of beginning, containing about fifteen hundred and thirty-eight square feet, more or less. Said land is believed by the petitioner to belong to Jacob Lipsitz.

The said parcel of land is shown within lines marked in yellow upon a plan entitled "Boston & Albany R.R., N. Y. C. R.R. Co., Lessee, Boston Division, Grand Junction Branch, Additional Land Required for Railroad Purposes, Chelsea," dated April, 1917, and signed by us and filed herewith.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
CHARLES A. RUSSELL,

MAY 28, 1917. [P. S. C. 1747]

Commissioners.

Petition of the Boston and Albany Railroad Company that the Commission prescribe the limits within which certain land in Springfield may be taken for railroad purposes.

Upon the petition of the Boston and Albany Railroad Company, filed February 13, 1917, under the provisions of section 78 of Part II of chapter 463 of the Acts of 1906, as amended by chapter 157 of the General Acts of 1915, praying that the Public Service Commission prescribe the limits within which it may take certain land for railroad purposes in the city of Springfield in the county of Hampden in the commonwealth of Massachusetts, outside the limits of its route already fixed in said city, for the purpose of making and securing its railroad and for one

or more new tracks adjacent to other land occupied by it by tracks already in use, due notice of the above petition and of the time and place of hearing thereon has been given to the owners of said land and to other parties interested therein, in the manner prescribed by law and in accordance with the order of notice issued on said petition, and a hearing on said petition has been given on March 8, 1917, at which the petitioner was represented by George H. Fernald, Jr., and certain landowners by Ernest W. Carman.

All persons appearing at the hearing held as aforesaid having been heard, and the subject matter of said petition having been duly considered, it is now determined and adjudged that the said Boston and Albany Railroad Company requires additional land in Springfield for the purpose of making and securing its railroad and for one or more new tracks adjacent to other land occupied by it by tracks already in use, and is unable to obtain the same by agreement with the owners, and it is further determined, ordered and decreed that such land may be taken as by law provided within the following limits, to wit:—

Five (5) parcels of land situated in the city of Springfield, county of Hampden and commonwealth of Massachusetts, bounded and described as follows:—

Parcel No. 1.—Beginning at a point on the dividing line between land supposed to belong to Edward M. Caton and land supposed to belong to Grace E. Goff, distant seventy-five (75) feet southeasterly from the base line of the location of the Boston and Albany railroad measured at right angles thereto; thence running south $89^{\circ} 19' 30''$ west (magnetic) over land supposed to belong to said Edward M. Caton and over land supposed to belong to John Heydt, Harding H. Colwell and Charles E. Rieutard by a line drawn parallel with and distant seventy-five (75) feet southerly from said base line of said location about sixteen hundred and sixty-two and fifteen hundredths (1,662.15) feet to the northeasterly line of Pasco road; thence turning and running north $19^{\circ} 35' 20''$ west (magnetic) by the said northeasterly line of said Pasco road about thirty-five and sixty-eight hundredths (35.68) feet to the land of the said Boston and Albany Railroad Company; thence turning and running north $89^{\circ} 19' 30''$ east (magnetic) by land of the said railroad company about sixteen hundred and seventy-seven and seven hundredths (1,677.07) feet to said land of said Grace E. Goff; thence turning and running south 5° west (magnetic) by said land of said Goff about thirty-three and ninety-two hundredths (33.92) feet to the place of beginning.

Parcel No. 2.—Beginning at a point on the westerly line of said Pasco road distant seventy-five (75) feet southerly from the said base line of the location of the Boston and Albany railroad measured at right angles

thereto; thence running south $89^{\circ} 19' 30''$ west (magnetic) over land supposed to belong to Ellen C. Lanckton, over land supposed to belong to Devon Realty Company, over land supposed to belong to Philip Kilbride and Thomas Kilbride, and over land supposed to belong to the heirs of Thomas Lahey by a line drawn parallel with and distant seventy-five (75) feet southerly from said base line of said location about two thousand three hundred and twenty-seven and forty-four hundredths (2,327.44) feet to a point opposite station $479+66.05$ on said base line; thence turning and running southwestwardly over land supposed to belong to the said heirs of Thomas Lahey and over land supposed to belong to the City of Springfield about six hundred and twenty-six (626) feet to a point on the west shore of Five Mile Pond and at land of said Boston and Albany Railroad Company distant one hundred (100) feet southerly from the said base line of the location of the Boston and Albany railroad measured at right angles thereto; thence turning and running northeastwardly and eastwardly by land of said Boston and Albany Railroad Company about two thousand nine hundred and sixty-five and eighty-nine hundredths (2,965.89) feet to the said westerly line of said Pasco road; thence turning and running south $2^{\circ} 25' 30''$ east (magnetic) by the said westerly line of said Pasco road about thirty-three and seventy-seven hundredths (33.77) feet to the place of beginning.

Parcel No. 3. — Beginning at a point on the dividing line between land of the said Boston and Albany Railroad Company and land supposed to belong to the City of Springfield, distant seventy-five (75) feet southerly from the said base line of the location of the Boston and Albany railroad measured at right angles thereto at station $493+39.13$; thence running south 80° west by a line drawn parallel with and distant seventy-five (75) feet southerly from the said base line of said location about two thousand one hundred and thirty-nine and fifty-nine hundredths (2,139.59) feet over land supposed to belong to the said City of Springfield, over land supposed to belong to Elijah B. Woodworth, Trustee, over land supposed to belong to Charles L. Towne; over land supposed to belong to Carmine Santamaria and again over a second parcel of land supposed to belong to said Elijah B. Woodworth, Trustee, to a point on the southeasterly line of Berkshire avenue; thence turning and running northeastwardly by the said southeasterly line of said Berkshire avenue about forty-three and twenty-five hundredths (43.25) feet to land of the said Boston and Albany Railroad Company; thence turning and running north 80° east by land of said railroad company about one thousand nine hundred and seventy-eight and three hundredths (1,978.03) feet to a corner of said railroad company's land; thence turning and running south $84^{\circ} 03' 28''$ east by land of said railroad company about one hundred and forty-one and twenty-two hundredths (141.22) feet to the place of beginning.

Parcel No. 4. — Beginning at a point on the said southeasterly line of Berkshire avenue distant seventy-five (75) feet southerly from the said

base line of the location of the Boston and Albany railroad measured at right angles thereto; thence running south 80° west by a line drawn parallel with and distant seventy-five (75) feet southerly from said base line of said location about ninety-two (92) feet; thence turning and running northeastwardly about forty-six (46) feet to the present southerly side line of the location of the Boston and Albany railroad; thence turning and running north 80° east by the present southerly line of said location about ninety-two (92) feet to the said southeasterly line of said Berkshire avenue; thence turning and running southwestwardly by the said southeasterly line of said Berkshire avenue about forty-three and twenty-five hundredths (43.25) feet to the place of beginning, lying within the present limits of said Berkshire avenue, on the discontinuance of that part of said Berkshire avenue lying within said parcel in proceedings now pending before the county commissioners for the county of Hampden.

Parcel No. 5. — Beginning at a point on the westerly line of said Berkshire avenue, distant seventy-five (75) feet southerly from said base line of the location of the Boston and Albany railroad, measured at right angles thereto; thence running south 80° west by a line drawn parallel with and distant seventy-five (75) feet southerly from said base line of said location about four thousand nine hundred and eleven and seventy-nine hundredths (4,911.79) feet over land supposed to belong to the W. H. Miner Chocolate Company, over land supposed to belong to John A. and Mary Ellen Roesch; over land supposed to belong to William C. King, over land supposed to belong to Mark Blair, over land supposed to belong to George H. and Elsie Terry, over land supposed to belong to Elizabeth M. Roesch, over land supposed to belong to Jesse J. Maguire, over land supposed to belong to Rupert W. Robinson, over land supposed to belong to Elizabeth M. Roesch, over land supposed to belong to Mary G. Cramond, over land supposed to belong to Charles A. Cadwell, Executor, and over land supposed to belong to George F. Flagg, to a point opposite station $566+42.80$ on said base line; thence turning and running south $65^{\circ} 57' 50''$ west about two hundred and six and sixteen hundredths (206.16) feet over land supposed to belong to said Flagg, to a point distant one hundred and twenty-five (125) feet southerly from said base line of said location, measured at right angles thereto at station $568+42.80$; thence turning and running south 80° west over land supposed to belong to said Flagg by a line drawn parallel with and distant one hundred and twenty-five (125) feet southerly from said base line about one hundred and seventy and fifty-five hundredths (170.55) feet to a point opposite station $570+13.35$; thence turning and running south $87^{\circ} 57' 13''$ west over land supposed to belong to Patrick F. Fitzgerald, Ellen A. Fitzgerald and Nicholas R. Fitzgerald, about four hundred and eighty-two and five hundredths (482.05) feet to a point distant seventy-five (75) feet southerly from said base line, measured at right angles thereto at station $574+92.80$; thence turning and running south 80° west over land supposed to belong to said Patrick F. Fitzgerald, Ellen A. Fitzgerald,

and Nicholas R. Fitzgerald by a line drawn parallel with and distant seventy-five (75) feet southerly from said base line about one thousand five hundred and thirty-eight and eighty-seven hundredths (1,538.87) feet to land supposed to belong to Alexander Bliss; thence turning and running north 1° 16' east by said land supposed to belong to said Bliss thirty-four and forty-one hundredths (34.41) feet to land of said railroad company; thence turning and running north 80° east by land of said railroad company about seven thousand three hundred and thirty-one and thirty-two hundredths (7,331.32) feet to the said westerly line of said Berkshire avenue; thence turning and running southwestwardly by the said westerly line of said Berkshire avenue about forty-nine and eighty-two hundredths (49.82) feet to the place of beginning.

The said parcels of land are shown within lines marked in yellow upon a plan entitled "Boston & Albany R.R., N. Y. C. R.R. Co., Lessee, Boston & Albany Divisions, Main Line, Additional Land Required for Railroad Purposes, Springfield," dated May 18, 1917, and signed by us and filed herewith.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
CHARLES A. RUSSELL,

MAY 28, 1917. [P. S. C. 1682]

Commissioners.

Petition of the Boston and Providence Railroad Corporation that the Commission prescribe the limits within which certain land in Mansfield may be taken for railroad purposes.

Upon the petition of the Boston and Providence Railroad Corporation, filed May 12, 1917, under the provisions of section 78 of Part II of chapter 463 of the Acts of 1906, as amended by chapter 157 of the General Acts of 1915, praying that the Public Service Commission prescribe the limits within which it may take certain land for railroad purposes in the town of Mansfield in the county of Bristol in the commonwealth of Massachusetts, outside the limits of its route already fixed in said town, for the purpose of making and securing its railroad and for depot or station purposes and for one or more new tracks adjacent to other land occupied by it by tracks already in use, due notice of the above petition and of the time and place of hearing thereon has been given to the owner of said land and to other parties interested therein, in the manner prescribed by law and

in accordance with the order of notice issued on said petition, a hearing on said petition has been given on June 25, 1917.

All persons appearing at the hearing held as aforesaid having been heard, and the subject matter of said petition having been duly considered, it is now determined and adjudged that the said Boston and Providence Railroad Corporation requires additional land in Mansfield for the purpose of making and securing its railroad and for depot or station purposes and for one or more new tracks adjacent to other land occupied by it by tracks already in use, and is unable to obtain the same by agreement with the owner, and it is further determined, ordered and decreed that such land may be taken as by law provided within the following limits, to wit: —

Two (2) parcels of land situated in the town of Mansfield, county of Bristol, and commonwealth of Massachusetts, bounded and described as follows: —

Parcel No. 1. — Beginning at a point in the present division line between land of Walter M. Lowney and land now or formerly of Herbert C. Wilmarth, said point being distant thirty-three (33) feet northwesterly, measured at right angles from station 1006+68.33 of the monumented center line of the railroad of the Boston and Providence Railroad Corporation; thence running north $35^{\circ} 41' 46''$ west by land now or formerly of Herbert C. Wilmarth forty-four and seventy-six hundredths (44.76) feet, more or less, to a point distant sixty-nine (69) feet northwesterly at right angles from said monumented center line; thence running north $27^{\circ} 51' 14''$ east by land now or formerly of the Mansfield Company, on a line parallel with and distant sixty-nine (69) feet northwesterly at right angles from said monumented center line seven hundred eighty-five and forty-nine hundredths (785.49) feet, more or less, to a road; thence running north $66^{\circ} 17' 14''$ east by said road fifty-seven and ninety-two hundredths (57.92) feet, more or less, to a point distant thirty-three (33) feet northwesterly, measured at right angles from station 1015+25.78 of said monumented center line; thence running south $27^{\circ} 51' 14''$ west by land of the said Boston and Providence Railroad Corporation eight hundred fifty-seven and forty-five hundredths (857.45) feet, more or less, to the point of beginning; containing twenty-nine thousand five hundred and seventy-two (29,572) square feet, including all right, title and interest of the said Walter M. Lowney in and to the road lying northerly of the above described premises.

Parcel No. 2. — Beginning at a point in the present division line between land of Walter M. Lowney and land of the Boston and Providence Railroad Corporation, which point is distant thirty-three (33) feet northwesterly, measured at right angles from station 1022+09.70 of the monumented center line of the railroad of said corporation; thence running north $49^{\circ} 40' 46''$ west in part by land of the said Boston and Providence

Railroad Corporation and in part by land of owner unknown thirty-five and eighty-five hundredths (35.85) feet, more or less, to a point distant sixty-eight (68) feet northwesterly, measured at right angles from said monumented center line; thence running north $27^{\circ} 51' 14''$ east by land of said Walter M. Lowney or owner unknown one hundred thirty-three and seven hundredths (133.07) feet, more or less, on a line parallel with and distant sixty-eight (68) feet northwesterly at right angles from said monumented center line to land now or formerly of the Mansfield Bleachery; thence running north $68^{\circ} 42' 14''$ east by said land now or formerly of the Mansfield Bleachery fifty-three and fifty-one hundredths (53.51) feet, more or less, to a point distant thirty-three (33) feet northwesterly at right angles from station 1023+90.99 of said monumented center line; thence running south $27^{\circ} 51' 14''$ west by land of the said Boston and Providence Railroad Corporation one hundred eighty-one and twenty-nine hundredths (181.29) feet, more or less, to the point of beginning; containing fifty-five hundred eighty-nine (5,589) square feet, more or less.

The said parcels of land are supposed to belong to Walter M. Lowney and are shown within lines marked in yellow upon a plan entitled "The Boston and Providence Railroad Corporation, Additional Land Required for Railroad Purposes, Mansfield, Mass.," dated April 30, 1917, and signed by us and filed herewith.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

JUNE 28, 1917. [P. S. C. 1759]

Commissioners.

Petition of the Boston and Providence Railroad Corporation that the Commission prescribe the limits within which certain land in the town of Sharon may be taken for railroad purposes.

Upon the petition of the Boston and Providence Railroad Corporation, filed June 26, 1917, under the provisions of section 78 of Part II of chapter 463 of the Acts of 1906, as amended by chapter 157 of the General Acts of 1915, praying that the Public Service Commission prescribe the limits within which it may take certain land for railroad purposes in the town of Sharon in the county of Norfolk in the commonwealth of Massachusetts, outside the limits of its route already fixed in said town, for the purpose of making and securing its railroad and for depot

or station purposes and for one or more new tracks adjacent to other land occupied by it by tracks already in use, due notice of the above petition and of the time and place of hearing thereon has been given to the owner of said land and to other parties interested therein, in the manner prescribed by law and in accordance with the order of notice issued on said petition, and a hearing on said petition has been given on September 28, 1917.

All persons appearing at the hearing held as aforesaid having been heard, and the subject matter of said petition having been duly considered, it is now determined and adjudged that the said Boston and Providence Railroad Corporation requires additional land in Sharon for the purpose of making and securing its railroad and for depot or station purposes, and for one or more new tracks adjacent to other land occupied by it by tracks already in use, and is unable to obtain the same by agreement with the owner, and it is further determined, ordered and decreed that such land may be taken as by law provided within the following limits, to wit: —

One parcel of land situated in the town of Sharon, county of Norfolk and commonwealth of Massachusetts, bounded and described as follows: —

Beginning at a point in the present westerly line of the right of way of the said Boston and Providence Railroad Corporation, said point being in the northerly line of a highway known as Mohawk street, and is distant thirty-three (33) feet westerly, at right angles, from station 1225+20.17 of the monumented center line of the railroad of said railroad company; thence running south $24^{\circ} 36' 57''$ west by said Mohawk street one hundred thirty-one and forty-five hundredths (131.45) feet more or less to a point distant seventy-five (75) feet westerly, at right angles from said monumented center line; thence running north $5^{\circ} 58' 57''$ east by land of Rosetta D. Blackmer on a line parallel with and distant by land of the said Rosetta D. Blackmer on a line parallel with and distant seventy-five (75) feet westerly at right angles from said center line, eight hundred seventy-eight and five hundredths (878.05) feet, more or less, to land now or formerly of the heirs of William Tamplin; thence running south $43^{\circ} 53' 03''$ east by said land now or formerly of the heirs of William Tamplin fifty-four and ninety-three hundredths (54.93) feet more or less to a point in the said westerly line of ownership of the said railroad corporation, which point is distant thirty-three (33) feet westerly at right angles from station 1232+38.25 of said center line; thence running south $5^{\circ} 58' 57''$ west by land of the said Boston and Providence Railroad Corporation seven hundred eighteen and eight hundredths (718.08) feet, more or less, to the point of beginning; containing thirty-three thousand five hundred nineteen (33,519) square feet, more or less, and including

all the rights of the said Rosetta D. Blackmer in and to that portion of the highway known as Mohawk street lying southerly of the premises above described.

The said parcel of land is supposed to belong to Rosetta D. Blackmer and is shown within lines marked in yellow upon a plan entitled "The Boston and Providence Railroad Corporation, Additional Land Required for Railroad Purposes, Sharon, Mass.," dated June 5, 1917, and signed by us and filed herewith.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

OCTOBER 3, 1917.

[P. S. C. 1803]

Commissioners.

Petition of the New York, New Haven and Hartford Railroad Company that the Commission prescribe the limits within which certain land in South Boston may be taken for railroad purposes.

Upon the petition of the New York, New Haven and Hartford Railroad Company, filed September 11, 1916, under the provisions of section 78 of Part II of chapter 463 of the Acts of 1906, as amended by chapter 157 of the Acts of 1915, praying that the Public Service Commission prescribe the limits within which it may take certain land for railroad purposes in the South Boston district of the city of Boston, in the county of Suffolk, in the commonwealth of Massachusetts, outside the limits of its route fixed in said city, for the purpose of making and securing its railroad and for depot or station purposes and for one or more new tracks adjacent to other land occupied by it by tracks already in use, due notice of the above petition and of the time and place of hearing thereon has been given to the owners of said land and to other parties interested therein, in the manner prescribed by law and in accordance with the order of notice issued on said petition, and a hearing on said petition has been given on November 15, 1916.

All persons appearing at the hearing aforesaid having been heard, and the subject matter of said petition having been duly considered, it is now determined and adjudged that the said New York, New Haven and Hartford Railroad Company re-

quires the land described in said petition for the purpose of making and securing its railroad and for depot or station purposes and for one or more new tracks adjacent to other land occupied by it by tracks already in use, and is unable to obtain the same by agreement with the owners, and it is further determined, ordered and decreed that said land may be taken as by law provided within the following limits, to wit: —

A parcel of land situated in the South Boston district of the city of Boston, in the county of Suffolk and the commonwealth of Massachusetts, bounded and described as follows: —

Beginning at a point in the southwesterly side line of West Third street eighty-five (85.00) feet distant northwesterly from the northwesterly side line of B street, measured on the southwesterly side line of West Third street; thence north $49^{\circ} 0'$ west forty-eight (48) feet more or less on said southwesterly line of West Third street, to land of the New York, New Haven and Hartford Railroad Company at a point forty-two and seventy-five hundredths (42.75) feet distant southeasterly from the center line of location of the New York, New Haven and Hartford railroad, measured on said southwesterly side line of West Third street; thence south $41^{\circ} 20'$ west ninety and five-tenths (90.5) feet more or less by land of the New York, New Haven and Hartford Railroad Company, to a point forty-two and fifty-three hundredths (42.53) feet from said center line of location measured at right angles thereto; thence south $49^{\circ} 0'$ east forty-eight (48) feet more or less by land of the New York, New Haven and Hartford Railroad Company, to land supposed to belong to Dennis C. Loney; thence north $41^{\circ} 20'$ east ninety and five-tenths (90.5) feet more or less by land supposed to belong to Dennis C. Loney and by land supposed to belong to Catherine McCue to the point of beginning, containing four thousand three hundred forty-four (4,344) square feet more or less; supposed to be owned by Francis A. Campbell *et al.*, Trustees.

The said parcel of land is shown within lines marked in yellow upon a plan entitled "N. Y., N. H. & H. R.R., Midland Division, Additional Land Required for Railroad Purposes, Boston, Mass.," dated January 8, 1917, and signed by us and filed herewith.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

JANUARY 16, 1917. [P. S. C. 1480]

Commissioners.

Revocation of order of the Commission dated October 27, 1916, prescribing the limits within which certain land in Springfield may be taken for railroad purposes.

It appearing that through an error in the description and plan accompanying the petition of the New York, New Haven and Hartford Railroad Company filed July 24, 1916, as amended by a further petition filed September 29, 1916, the order of the Commission thereon, issued October 27, 1916, does not properly describe the land in the city of Springfield which said company intended to take and that no further steps have been taken to effect the taking of said land, —

It is

Ordered, That the order of the Commission dated October 27, 1916, prescribing the limits within which certain land in the city of Springfield may be taken for railroad purposes by the New York, New Haven and Hartford Railroad Company be hereby revoked.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

MAY 14, 1917. [P. S. C. 1433]

Commissioners.

Petition of the New York, New Haven and Hartford Railroad Company that the Commission prescribe the limits within which certain land in Springfield may be taken for railroad purposes.

Upon the petition of the New York, New Haven and Hartford Railroad Company, filed March 14, 1917, under the provisions of section 78 of Part II of chapter 463 of the Acts of 1906, as amended by chapter 157 of the Acts of 1915, praying that the Public Service Commission prescribe the limits within which it may take certain land for railroad purposes in the city of Springfield in the county of Hampden in the commonwealth of Massachusetts, outside the limits of its route already fixed in said city, for the purpose of making and securing its railroad and for depot or station purposes and for one or more new tracks adjacent to other land occupied by it by tracks already in use, due notice of the above petition and of the time and place of hearing thereon

has been given to the owners of said land and to other parties interested therein, in the manner prescribed by law and in accordance with the order of notice issued on said petition, and a hearing on said petition has been given on April 20, 1917. All persons appearing at the hearing held as aforesaid having been heard, and the subject matter of said petition having been duly considered, it is now determined and adjudged that the said New York, New Haven and Hartford Railroad Company requires the land described in said petition for the purpose of making and securing its railroad and for depot or station purposes and for one or more new tracks adjacent to other land occupied by it by tracks already in use, and is unable to obtain the same by agreement with the owners, and it is further determined, ordered and decreed that said land may be taken as by law provided within the following limits, to wit: —

A parcel of land situated in Springfield, in the county of Hampden and the commonwealth of Massachusetts, bounded and described as follows: —

Beginning at a point in the westerly line of the right of way of the Springfield branch of the New York, New Haven and Hartford Railroad Company, which point is at the intersection of said westerly line of the right of way with the southerly line of Chapelle street, produced easterly and is also distant twenty-four and seventy-five hundredths (24.75) feet westerly at right angles from station 136+49.03 of the monumented center line of said Springfield branch; thence running south $81^{\circ} 13'$ west by land now or formerly of the estate of Elisha Gunn one hundred twenty-six and seven tenths (126.7) feet; thence running north $8^{\circ} 54'$ west in part by said Chapelle street, in part by land now or formerly of J. J. Hennessy and F. Liverant, in part by Beacon street and in part by land now or formerly of W. H. Dexter, Patrick Hennessy, Nelson L. Elmer, George H. Croninshield, Edward A. Meacham, Thomas F. Meaney, Joseph and Rosina Maruca, Nelson L. Elmer and the estate of Elisha Gunn, eight hundred ninety and ninety-one hundredths (890.91) feet to land of the City of Springfield; thence running north $81^{\circ} 02' 05''$ east by said land of the City of Springfield forty-eight and seventy-three hundredths (48.73) feet to a point in the said westerly line of the right of way of the Springfield branch of said railroad company, which point is distant twenty-four and seventy-five hundredths (24.75) feet westerly, at right angles from station 127+54.40, of said monumented center line; thence running south $13^{\circ} 54'$ east by land of said railroad company eight hundred ninety-four and sixty-three hundredths (894.63) feet to the point of beginning, containing seventy-eight thousand one hundred eighty-four (78,184) square feet. Said land is believed by the petitioner to belong to the estate of Elisha Gunn, the heirs of which are supposed to be Elisha Gunn, Mary E. Simonds, Laura G. Callendar and Helen G. Burnie.

The said parcel of land is shown within lines marked in yellow upon a plan entitled "The New York, New Haven and Hartford Railroad Company, Additional Land Required for Railroad Purposes, Springfield, Mass.," dated February 28, 1917, and signed by us and filed herewith.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

MAY 15, 1917. [P. S. C. 1433]

Commissioners.

Petition of the Old Colony Railroad Company that the Commission prescribe the limits within which certain land in Plymouth may be taken for railroad purposes.

Upon the petition of the Old Colony Railroad Company, filed August 25, 1916, under the provisions of section 78 of Part II of chapter 463 of the Acts of 1906, as amended by chapter 157 of the General Acts of 1915, praying that the Public Service Commission prescribe the limits within which it may take certain land for railroad purposes in the town of Plymouth, in the county of Plymouth, in the commonwealth of Massachusetts, outside the limits of its route already fixed in said town, for the purpose of making and securing its railroad and for depot or station purposes and for one or more new tracks adjacent to other land occupied by it by tracks already in use, due notice of the above petition and of the time and place of hearing thereon has been given to the owner of said land and to other parties interested therein, in the manner prescribed by law and in accordance with the order of notice issued on said petition, and a hearing on said petition has been given on November 15, 1916.

All persons appearing at the hearing held as aforesaid having been heard, and the subject matter of said petition having been duly considered, it is now determined and adjudged that the said Old Colony Railroad Company requires the land described in said petition for the purpose of making and securing its railroad and for depot or station purposes and for one or more new tracks adjacent to other land occupied by it by tracks already in use, and is unable to obtain the same by agreement with the owner, and it is further determined, ordered and decreed that

said land may be taken as by law provided within the following limits, to wit: —

A parcel of land situated in Plymouth in the county of Plymouth and the commonwealth of Massachusetts, bounded and described as follows: —

Beginning at a point in the present southerly line of ownership of the Old Colony Railroad Company at the intersection of said line with the westerly line of Standish avenue, so called, said point being fifty (50) feet southerly from the center line of location, measured radially thereto; thence running south $1^{\circ} 43'$ east by said Standish avenue twenty-six and seven-tenths (26.7) feet, more or less, to a point distant twenty-five (25) feet southerly, measured radially, from the said present southerly line of ownership of the said railroad company; thence running westerly by land of Victor Dias Cairiero on a line having a radius of ten hundred seventy-one and twenty-eight hundredths (1,071.28) feet, which line is also concentric with and distant twenty-five (25) feet southerly, measured radially, from the said southerly line of ownership of said railroad company, two hundred forty-two and fifty-eight hundredths (242.58) feet more or less; thence running north $15^{\circ} 39'$ west, twenty-six and eighty-seven hundredths (26.87) feet more or less, to a stone monument in the said southerly line of ownership of said railroad company, fifty (50) feet southerly of said center line of location, measured radially thereto; thence running easterly by land of the said railroad company on a line having a radius of ten hundred ninety-six and twenty-eight hundredths (1,096.28) feet, two hundred forty-eight and seventy-three hundredths (248.73) feet more or less to the point of beginning; containing sixty-one hundred forty-six (6,146) square feet, more or less; supposed to belong to Victor Dias Cairiero.

The said parcel of land is shown within lines marked in yellow upon a plan entitled "Old Colony Railroad Company (N. Y., N. H. & H. R.R. Co., Lessee), Additional Land Required for Railroad Purposes, Plymouth, Mass.," dated at Boston, January 24, 1917, and signed by us and filed herewith.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

FEBRUARY 27, 1917.

[P. S. C. 1474]

Commissioners.

STREET RAILWAY LOCATIONS.

Petition of the Boston Elevated Railway Company for an extension of time for the construction of its Everett extension, so-called, in the cities of Boston and Everett.

It appearing after notice and hearing that, by the provisions of chapter 777 of the Acts of 1913, the petitioner was authorized to construct as part of the extension of its elevated railway into the city of Everett, a bridge in and over the Mystic river in the city of Boston, and that by the provisions of section 3 of said chapter the Directors of the Port of Boston were authorized and directed to order and make a relocation of the channel of the Mystic river at and in the vicinity of the Malden bridge; that by the terms of section 4 of said Act the time allowed for the construction and completion of said bridge and of the proposed elevated railway structures in the city of Everett is eighteen months, beginning with the day of the approval by the Secretary of War of the plans for the structure, which date was August 20, 1914, unless such time be extended by this Commission; that by the provisions of an order issued under date of July 30, 1915, this Commission extended the time within which the construction of said bridge and incidental structures and the proposed elevated railway structures in the city of Everett should be completed to February 20, 1917; and it now appearing that owing to unforeseen circumstances not due to the fault of the company, it has been impossible to complete the construction of said bridge and elevated structure within the time limited in said order of extension, and that public interest and convenience require such extension, — it is

Ordered, That under the provisions of chapter 777 of the Acts of 1913, the Commission hereby extends the time within which the Boston Elevated Railway Company is authorized to construct a bridge in and over the Mystic river in the city of Boston and the proposed elevated railway structures in the city of Everett, to February 20, 1918.

Attest: CHARLES E. MANN,

FEBRUARY 20, 1917. [P. S. C. 767]

Executive Secretary.

Petition of the Boston Elevated Railway Company for approval of plans showing location, form and method of construction of renewals of track system of its existing elevated structure; also form and method of construction proposed for the track system of the elevated structure for its Everett extension.

The annexed plan, numbered B-6298, entitled "Plan and Cross Section of Track on Tangents Showing proposed Changes in dapping of Timbers" and dated July 24, 1917, showing location, form and method of construction of proposed track system for renewals of the existing elevated structure of the Boston Elevated railway, from Forest Hills to Sullivan square, Charlestown, including the so called Atlantic Avenue Loop and also showing proposed form and method of construction of the track system for the Everett extension of the elevated structure of said Boston Elevated railway, is hereby approved.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

AUGUST 16, 1917.

[P. S. C. 1846]

Commissioners.

CERTIFICATES PRELIMINARY TO OPERATION —
STREET RAILWAY.

Petition of Boston Elevated Railway Company for certificate preliminary to the operation of a section of its railway in the Dorchester Tunnel in Boston and South Boston.

Examination having been made of a section of the Boston Elevated railway in the Dorchester Tunnel, so-called, in Boston, — it is

Ordered, That the Commission hereby certify that all laws have been complied with preliminary to the operation of a section of the Boston Elevated railway in Boston, consisting of double track in the Dorchester Tunnel, from a connection with existing tracks at South Station Under, to a point about 400 feet beyond West Fifth street in the South Boston district of Boston, including a diamond crossover at A street, and a station to be known as Broadway, the total length of said track, measured as single track, being about 8,694 feet, and that the railway appears to be in a safe condition for operation.

Attest: CHARLES E. MANN,

DECEMBER 14, 1917.

[P. S. C. 2007]

Executive Secretary.

Petition of the West End Street Railway Company, by the Boston Elevated Railway Company, its attorney, for certificate preliminary to the operation of sections of its railway in Boston.

Examination having been made of sections of the West End street railway in Boston and South Boston, — it is

Ordered, That the Commission hereby certify that all laws have been complied with preliminary to the operation of sections of the West End street railway in Boston, to be operated in connection with the operation of a section of the Boston Elevated railway in the Dorchester Tunnel, as follows: —

Single surface car track at upper level in the Broadway station of said Dorchester Tunnel;

Additional double track on Foundry street, extending from Dorchester avenue to portal of the incline at Broadway station;

Double track and curves on Broadway extension, West Broadway and Dorchester avenue, including cross-connection on Broadway extension;

Double track and curves on Dorchester avenue, from a point north of West Fourth street to a point south of West Fifth street, and on the incline from Dorchester avenue to the portal of the tunnel;

Single track on West Fifth street, from Dorchester avenue to the New York, New Haven and Hartford railroad cut;

Double track on Dorchester avenue and Sixth street, from a point north of West Sixth street to a point south of Old Colony avenue;

Temporary single track on Dorchester avenue and West Sixth street, and over private land and a temporary bridge over the New York, New Haven and Hartford railroad;

Single track on West Seventh street, extending from Dorchester avenue to C street with curves, cross-overs, switches and connections;

Additional single curved track on B street and West Broadway;

The total length of said track, measured as single track, being 16,850 feet, — 15,000 feet being upon permanent location and 1,850 feet on temporary location, and that said sections of railway appear to be in a safe condition for operation.

Attest: CHARLES E. MANN,
DECEMBER 14, 1917. [P. S. C. 2012] *Executive Secretary.*

SIGNALS — RAILROAD OR RAILWAY.

Petition of the Boston and Maine Railroad relative to the elimination of ball signals and the installation of interlocking plant at Ayer.

After consideration, — it is

Ordered, That the approval of the Commission be hereby given to the elimination of ball signals at the junction of the two main tracks of the Fitchburg division and the two main tracks of the Worcester, Nashua and Portland division of the Boston and Maine railroad at Ayer, and the substitution therefor of interlocking signals as shown upon a plan entitled "Boston and Maine Railroad, Fitchburg Div., Main Line, Switches and Signals at Diamond Crossing, Ayer, Mass." and numbered R-214, a copy of which plan is on file in this office.

Attest: ANDREW A. HIGHLANDS,
OCTOBER 25, 1917. [P. S. C. 1944] Secretary.

Application of the Boston and Maine Railroad for approval of type of interlocking signal at Peabody.

After consideration, — it is

Ordered, That the approval of the Commission be hereby given to the installation by the Boston and Maine Railroad of interlocking signals in place of the existing type of signals, at Peabody, said signals and the location thereof being described in the application and shown on plan numbered R-218 on file in this office.

Attest: ANDREW A. HIGHLANDS,
MARCH 1, 1917. [P. S. C. 1696-A] Secretary.

Petition of the Boston and Maine Railroad for further extension of time for replacing ball signals at Peabody.

After consideration, good cause having been shown, — it is
Ordered, That the time for replacing the so-called "ball

signals" at Peabody be hereby extended to December 1, 1917, and that the approval of the Commission be hereby given to the operation of such signals at said point until said date.

Attest: ANDREW A. HIGHLANDS,
APRIL 6, 1917. [P. S. C. 570] Secretary.

Petition of the Boston and Maine Railroad for approval of changes in signals at Tower "C" in East Somerville.

After consideration, —

It is

Ordered, That the approval of the Commission be hereby given to changes in signals at Tower "C" in East Somerville, as shown upon a blue print numbered R 238 and marked "Boston and Maine Railroad, Terminal Division Switch and Signals, Towers 'C' and 'D', East Somerville," as revised December 18, 1917, on file in this office.

Attest: ANDREW A. HIGHLANDS,
DECEMBER 28, 1917. [P. S. C. 2027] Secretary.

Application of the Boston and Maine Railroad for approval of change in signal arrangement at Barber crossing in Worcester.

After consideration, — it is

Ordered, That the approval of the Commission be hereby given to certain changes in the signal arrangement at the interlocking tower at Barber crossing in Worcester, as shown on a plan entitled "Side track connecting No. 2 and No. 3 Tracks for Norton Co. at Barber Station" and dated 11-8-16, on file in this office.

Attest: ANDREW A. HIGHLANDS,
MARCH 3, 1917. [P. S. C. 1696-B] Secretary.

Petition of the New York, New Haven and Hartford Railroad Company for approval of changes in signals.

After consideration, — it is

Ordered, That the approval of the Commission be hereby given to certain changes in signals upon the New York, New Haven and Hartford railroad, as shown on blue prints on file in this office, as follows: —

No. 13 — Blue print S-872-E — signal changes South Bay Jc. to South Boston, dated June 15th, 1910, correct to January 17, 1917;

No. 14 — Blue print S-884 — automatic signals Braintree to Greenbush, dated May 29th, 1911, corrected to January 17, 1917.

Attest: ANDREW A. HIGHLANDS,
MARCH 2, 1917. [P. S. C. 1671-B] Secretary.

*Petition of the New York, New Haven and Hartford Railroad
Company for approval of changes in signals.*

In accordance with a vote of the Commission adopted October 1, 1915, it is

Ordered, That the approval of the Commission be hereby given to certain changes in signals upon the New York, New Haven and Hartford railroad as shown on blue prints as follows: —

Blue print S-1058-A — electric distant signal at Fitchburg, Mass., dated March 29th, 1910, corrected to September 30th, 1915.

Blue print S-91-3 — electric distant signal Clarendon Hills, dated January 3rd, 1917.

Blue print S-8-A — electric distant signal west bound Forest Hills, dated August 15th, 1913, corrected to April 4th, 1916.

Blue print S-1251-3 — electric distant signal West Mansfield, dated December 19th, 1916.

Blue print S-1251-2 — electric distant signal East Foxboro, dated December 19th, 1916.

Blue print S-91-1 — electric distant signal Boylston St., dated January 3rd, 1917.

Blue print S-60-E — electric distant signal Park St., Attleboro, dated September 11th, 1907, corrected to August 4th, 1916.

Blue print S-1251-1 — electric distant signal Sharon Heights, dated December 19th, 1916.

Blue print S-718-C — interlocking at Braintree — new dwarf signal, dated June 21st, 1916.

Blue print S-734-B — electric home signal, Stanley, Mass., dated December 28th, 1915.

Blue print S-399-C — relocation of dwarf signal, interlocking station M-334, Worcester, Mass., dated May 31st, 1912, corrected to May 26th, 1916.

Blue print S-91-2 — change mechanical distant signal to electric signal, west bound, Forest Hills, dated January 3rd, 1917.

Attest: CHARLES E. MANN,
FEBRUARY 3, 1917. [P. S. C. 1671-A] Executive Secretary.

SPEED OF CARS — STREET RAILWAY.

Petition of the city of Woburn for approval of regulations for speed of street cars in that city.

After notice and hearing and full consideration, — it is

Ordered, That the regulations relative to speed of cars upon street railways in the city of Woburn, adopted by the City Council of said city as revised and approved, be as follows: —

1. No car shall be propelled at a greater rate of speed than fifteen (15) miles an hour, except in such parts of the city as are beyond the junction of Salem and Bow streets, Eaton avenue on Main street, and where the tracks of the Bay State Street Railway Company enter Winn street from its private right of way.

2. In approaching any public or private way intersecting that in which the railway is located, the speed of the car must be reduced to such a rate as will make it possible to stop immediately.

3. In rounding curves and in all cases where the view of the motorman is obstructed for any reason, the speed of the car must be reduced to meet the condition of limited vision of railway and highway.

4. Before taking any heavy descending grade, the speed of the car must be so reduced as to test the working of the brakes.

5. Where the railway lies within a highway and is close to a narrow travelled road, the speed of the car must be reduced to meet this condition whenever such road is in rightful use by others.

6. Where the railway occupies a portion of the travelled road, the absence of any exclusive right of way on the part of the car makes it necessary that its speed be from time to time so restricted as to permit others to safely exercise their common right to a reasonable use of the road.

7. No person having the control of the speed of a street railway car in any street shall, except in case of accident, or to prevent injury to persons or property, and at passing points on single track, and at transfer points, allow such a car to go within ten feet of a car or other vehicle in front.

8. No person having control of the speed of a street railway car shall fail to stop his car at any place in the street where directed by a police officer so to do.

9. No person having control of the speed of a street railway car passing in a street shall fail to keep a vigilant watch for all teams, carriages and persons, especially children, nor shall such person fail to strike a bell

several times in quick succession on approaching any team, carriage, or person, and no person shall, after such striking of a bell, delay or hinder the passage of the car.

10. No person having control of the speed of a street railway car passing in a street shall, on the appearance of danger to any team, carriage or person from, or on the appearance of any obstruction to, his car, fail to stop the car in the shortest time and space possible.

11. No person having control of the speed of a street railway car shall stop any such car on a cross-walk or in front of an intersecting street, except to avoid collisions or danger to persons or as directed by a police officer, and except in the case of cross-walks, to allow passengers to get on and off the cars.

12. Every car shall come to a full stop before crossing another street railway at grade.

13. These rules and regulations are subject to further revision by the Commission from time to time as the public safety may seem to require.

Attest: ANDREW A. HIGHLANDS,
DECEMBER 19, 1917. [P. S. C. 1622] *Secretary.*

STATIONS AND STATION ACCOMMODATIONS.

RAILROAD.

Petition of Eugene C. Upton relative to necessity of a subway at the Malden station of the Portland Division of the Boston and Maine Railroad and to the operation of trains at said station.

The conditions at the so-called "Western Division" station in Malden were, until the present year, similar to those at many other stations in this commonwealth, passengers and trespassers being permitted to cross the tracks freely between the east and west platforms. Some three months ago, following a fatal accident which occurred at this point, the city government passed a resolution requesting the Boston and Maine Railroad to install a fence between the main tracks to prevent a recurrence of such accidents. The fence was immediately constructed, but has resulted in inconvenience to patrons of the railroad. An agreement has now been reached for the construction of a passageway beneath the tracks, for the accommodation of passengers taking or leaving both inbound and outbound trains.

At the hearing on the petition it appeared that at least three months will be necessary for the construction of this subway, and the petitioner asks for relief from the continued inconvenience caused by the maintenance of the fence. Gates have been placed in the fence at two points in front of the station, and the company, of its own volition, stations a man at one of these gates a few minutes previous to the arrival of northbound trains, to permit passengers who have purchased tickets on the west side of the tracks to pass to the platform upon the east side, for the purpose of boarding such trains. A much larger number of passengers who reach Malden upon the trains outbound from Boston are obliged, in order to reach the west side of the tracks, to go either to Pleasant street, which passes under the tracks on the southerly side of the station, or to go to Mountain avenue, which crosses the railroad by an overhead bridge, in the opposite direction, by ascending a stairway.

The company having established a precedent, by allowing passengers to cross the tracks through the gate from the west to the

east side, there appears to be no good reason why arrangements could not be made for the convenience of the much larger number of passengers coming from Boston, who desire to cross from the east to the west platform, thus relieving them from the necessity of following circuitous routes either by Pleasant street or Mountain avenue to reach their homes.

The platform on the east side of the track, opposite the station, has an open umbrella shed, and in order to afford better shelter from weather conditions, a structure was built, closed on three sides, to which objection is made, as it has reduced the width of the platform at this point to a comparatively narrow space between the structure and the tracks.

After notice and hearing and full consideration, — it is

Ordered, That the Boston and Maine Railroad, until such a time as the proposed underpass at the Portland Division station in Malden is constructed, maintain a tender at one of the gates in the fence which has been constructed between the main tracks, and, whenever it may be done with safety, permit passengers leaving northbound trains, after the departure of a train, to pass through said gate from the east to the west platform of the station.

It is, —

Further ordered, That the Boston and Maine Railroad forthwith remove the structure recently built beneath the shed upon the east platform of said station.

By the Commission,

ANDREW A. HIGHLANDS,

APRIL 6, 1917. [P. S. C. Com. 997]

Secretary.

STREET RAILWAY.

In re the terms of the contract for the use of the proposed station in the Boylston street subway in the city of Boston at or near Arlington street.

Chapter 342 of the Special Acts of 1916 provides for the construction by the Boston Transit Commission of an additional station in the Boylston street subway “at or near Arlington street, or at or near a point on the Boylston street subway substantially midway between the Copley square station in the Boylston street subway, and the station at the corner of Boylston and Tremont streets, provided for by Part I of chapter 741 of the Acts of the year 1911.” By section 10 of said chapter 342

the Boston Transit Commission, in the name and on behalf of the City of Boston, and the Boston Elevated Railway Company were authorized and requested, before the work of construction should be entered upon, "to enter into a contract in writing for the sole and exclusive use of the station herein provided for by the company for the running of its cars therein, and for such other uses as the Commission and the company may agree upon, etc." Section 11 of the statute, as amended by chapter 344 of the Special Acts of 1917, reads as follows: —

The commission shall fix a time and place, within six months after the passage of this act, when it will meet the officers of the company for the purpose of agreeing upon the terms of a contract for the sole use of said station by the company under the provisions of this act, and shall endeavor to bring about an agreement as to the terms of such contract and to procure the same to be executed. If the terms of the contract are not agreed upon by the commission and the company within nine months after the passage of this act, that fact shall be certified by the commission to the public service commission. The public service commission shall, within five months thereafter, set a date for a hearing, and shall notify the city of Boston, the commission, and the company of the hearing. The public service commission, after such hearings as it deems necessary and after giving full consideration to the rights and equities of the city, the public, and the company, shall determine upon a reasonable rental and other reasonable terms for such a contract for the sole use of said station, and shall notify the company and the commission of its finding, and shall request the company and the commission, in the name of the city, to enter into such a contract upon the terms so found and determined by the public service commission.

If the company shall not accept the terms so fixed on or before the first day of September, in the year nineteen hundred and seventeen, the public service commission shall certify that fact to the governor and council.

On February 20, 1917 this Commission was notified in writing by the Boston Transit Commission that it had met the officers of the Boston Elevated Railway Company within six months after the passage of chapter 342 of the Special Acts of 1916, as provided by section 10 thereof, for the purpose of agreeing upon the terms of the contract for the use of the proposed station by the company, and had endeavored "to bring about an agreement as to the terms of such contract and to procure the same to be executed", but that the company had declined to agree to the execution of such a contract. Thereafter a public hearing was held by this commission on June 8, 1917, at which the City of Boston, the Boston Transit Commission, the Boston Elevated

Railway Company and other interested parties were represented, for the purpose of determining, in accordance with section 11, "upon a reasonable rental and other reasonable terms" for the contemplated contract for the use of the station in question. At this hearing it was apparently agreed that the contract ought to follow in all respects the terms of the contract now in existence between the city and the company for the use and operation of the Boylston street subway, and that, indeed, other sections of the statute practically required the fixing of such terms. Certainly no opinion to the contrary was expressed by anyone. As we concur in this judgment and as the proceedings are largely a matter of form, since the company has definitely announced its intention of refusing to enter into the contract upon any terms under present financial conditions, no further discussion is deemed necessary. It is therefore

Ordered, That this Commission, after a public hearing and after giving full consideration to the rights and equities of the City of Boston, the public and the Boston Elevated Railway Company, hereby determines that the contract for the sole and exclusive use by said company of the additional station to be constructed by the Boston Transit Commission in the Boylston street subway in the city of Boston, under the provisions of chapter 342 of the Special Acts of 1916, as amended by chapter 344 of the Special Acts of 1917, shall be for a term from the beginning of the use thereof to the expiration of the contract now in existence between the City of Boston and said company for the use and operation of said Boylston street subway, shall provide for the payment by said company of an annual rental of $4\frac{1}{2}$ per cent of the net cost of said station, and shall in all other respects follow the terms and provisions of said existing contract for the use and operation of said Boylston street subway, so far as the same are applicable. And it is

Further Ordered, That a copy of this order shall forthwith be served upon the Boston Elevated Railway Company and the Boston Transit Commission as notice of the finding of this Commission, and that this Commission hereby requests said company and said Boston Transit Commission, in the name of the City of Boston, to enter into such a contract upon the terms herein found and determined.

By the Commission,

ANDREW A. HIGHLANDS,

AUGUST 28, 1917. [P. S. C. 1691]

Secretary.

Petition of Boston Elevated Railway Company for approval of plan numbered 35803, showing proposed location of tracks, station and approaches in the city of Everett from a point 400 feet north of Chemical lane to Bowdoin street.

This is a petition brought by the Boston Elevated Railway Company, under the provisions of chapter 497 of the Acts of 1907, chapter 500 of the Acts of 1897 and chapter 777 of the Acts of 1913, for approval of a plan of a terminal station, with approaches and connections with surface car lines, upon the elevated railway now under construction from Sullivan square to Everett. Some reference to the history of this railway is necessary. Under chapter 497 of the Acts of 1907 the Boston Elevated Railway Company was authorized to construct an elevated railway from Sullivan square, in the city of Boston, through the cities of Everett and Malden. By chapter 777 of the Acts of 1913 the right to build such a railway beyond a point in Everett south of the right of way of the Eastern Division of the Boston and Maine Railroad was revoked and the company was authorized, in lieu thereof, to build a subway from this point through Everett to Malden square in the city of Malden. This act took effect upon its acceptance by the city governments of Everett and Malden and by the directors of the Boston Elevated Railway Company in July, 1913, and the company was allowed five years after this acceptance to begin the construction of the subway, with the provision that, if construction were undertaken, it should be completed within two years after the expiration of this five-year period. It was further provided that, if the company should not begin construction within the specified time, the cities of Everett and Malden, acting through the Boston Transit Commission, might construct the subway and lease it to the company upon the same terms as the more recent subways constructed by the City of Boston.

The route and plans of the elevated structure from Sullivan square to a point north of Chemical lane in Everett have already been approved by the Commission and construction is far advanced. The railway crosses the Mystic river upon a bridge west of the highway bridge and continues over private land just west of Broadway in Everett. The pending petition asks for approval of plans showing the continuation of the railway for a short distance beyond Chemical lane as far as Bowdoin street and for the construction of a terminal station of a permanent

character upon the private land between Chemical lane and Brick Yard lane, with connections and approaches for surface car lines. Under this plan the elevated structure would come down to the surface upon an incline from the point north of Chemical lane, and the station would be constructed practically at the surface level. Surface cars from points in Malden and Everett would cross the Broadway bridge over the Boston and Maine tracks, turn into Bowdoin street, enter the station enclosure upon the west side by a line parallel to the inbound train platform, loop over the elevated tracks upon a bridge at the southern end of the station, and leave the station area at a point in Broadway just south of Brick Yard lane, after paralleling the outbound train platform on the east side. Connection would also be made with the tracks in Broadway south of the station area so that surface cars, instead of looping, could operate straight through the station from the south to the north or *vice versa*. The intention is that certain rapid transit trains from Forest Hills or Dudley street shall run through Sullivan square to this terminal and return, transferring passengers to and from surface car lines at this point. As the surface tracks and the elevated tracks would be at the same level, convenient facilities for transfer would be afforded.

The location of a permanent terminal for this elevated railway extension at the point indicated upon these plans is open to very grave objections. The surface car traffic of Everett and Malden which is to feed this station converges at the Broadway bridge over the Boston and Maine railroad, immediately to the north, and crosses the Revere Beach Boulevard just before it reaches the bridge. It is now subject, and under this plan would continue to be subject, to the delays and dangers of crossing the boulevard at grade, with its very heavy automobile traffic, and to the equal delay and inconvenience caused by the concentration of heavy car and vehicle traffic upon the bridge. At the present time the tracks on this bridge are handling, in the rush hours, all the cars that they can accommodate, and it is obvious that, with only the normal increase in traffic, the movement of cars over the boulevard, across the bridge and on Broadway to the station as located upon these plans would soon become so impeded as to prevent quick transit, and would tend largely to nullify the benefit of the entire expenditure for the extension from Sullivan square.

If this extension could be continued by a short subway under

the railroad tracks and the boulevard, so that an underground terminal station could be located just north of the boulevard, between Main street and Broadway, the result would be greatly to the advantage of all concerned. From an operating point of view, the delays and obstructions to traffic above referred to would be entirely eliminated, and it would also be possible to construct separate loops at the terminal for the Main street cars and the Broadway cars, thus doubling the capacity of the station. The change would also bring the station nearer to the residential and business districts of Everett. From Sullivan square to the location of the station in South Everett, as indicated upon the present plans, is a distance of 1 mile through a territory supplying very little traffic. The extension of one-half mile to the junction of Main street and Broadway would not only bring the terminal within about 1,500 feet of Everett square, but would also make it readily accessible to many residents without the trouble of taking surface cars.

The heavy expenditure in crossing the Mystic river, with the large tax laid upon the company in connection with the alteration of the highway bridge over the same river, makes the total expenditure for the elevated extension seem unwarranted, unless it is to accomplish a much greater benefit in saving of time and convenience to passengers than would be accomplished if the terminal station should be located at the point indicated upon the present plans. The desired benefit would, however, be realized if the additional half-mile extension already described should be made. This was, indeed, recognized by the General Court in legislation passed last year, chapter 331 of the Special Acts of 1916 providing as follows: —

Upon the construction of any combined elevated railroad and subway line from Sullivan square in that part of the city of Boston formerly called Charlestown, through the city of Everett, to Malden, pursuant to the provisions of chapter four hundred and ninety-seven of the acts of the year nineteen hundred and seven, and of chapter seven hundred and seventy-seven of the acts of the year nineteen hundred and thirteen, any station on said line in the vicinity of the eastern division of the Boston and Maine Railroad right of way in the city of Everett which shall be located and maintained for the purpose of connecting the street or surface car lines operated in the city of Everett with said elevated and subway line, shall be located and maintained at some convenient point north of the Revere Beach boulevard near Main street and Broadway in the city of Everett in such a manner that street cars entering or departing from such connecting station shall not be required to cross said boulevard.

The situation is appreciated by the company, and the desirability of the terminal upon the further side of the railway and boulevard is freely admitted. The difficulty is that, as the law now stands, the company cannot build the short stretch of subway which would be necessary for this purpose without definitely committing itself at the same time to the task of building the entire subway to Malden, provided for by the Act of 1913. This would be an extremely expensive undertaking and one which the company believes would not be justified by existing traffic requirements or by its present financial condition. It is not willing, under the circumstances, to assume this responsibility.

In the judgment of the Commission, the location of a permanent and expensive terminal station for this elevated extension upon the site fixed in the plans now under consideration would be clearly contrary to the public interest. Conferences have therefore been held between the Commission and official representatives of the company and of the city, and it has been generally agreed that legislation is desirable which will permit the company, without being under the obligation to construct the remainder of the subway to Malden, to build the short stretch which will enable it to locate a permanent underground station upon the opposite side of the boulevard. A bill to this effect has been drafted and, according to the understanding reached, is to be introduced in the Legislature. In our opinion it is eminently desirable that this bill should become law. As drafted, it in no way abridges or disturbs the rights of the cities of Everett and Malden so far as the remainder of the subway is concerned, as it is to take effect upon acceptance by the company and by the two city governments, and the construction of the underground terminal is made mandatory within a specified time limit, which may be extended by the Commission if good cause is shown.

Even if this legislation is secured, however, it will be some time before the terminal between Main street and Broadway can be constructed. Assuming favorable conditions, it probably could not be completed inside of two years, and present war conditions are so unfavorable with respect to labor, materials and capital that a considerably longer delay is likely. In the meantime, if no provision were made to the contrary, the elevated structure from Sullivan square, which is now so near completion, would lie idle and would be of no use either to the company or to the public. Such a situation ought clearly to be prevented, if possible. With this end in view, conferences have

been held between the engineers of the company and the engineers of the Commission and plans have been agreed upon for a temporary terminal station to be located upon the South Everett site and to be used pending the construction of a permanent underground terminal upon the other side of the railroad and boulevard.

The plans for this temporary station are very similar to the plans originally filed for a permanent structure upon the same site, but less provision has been made for future expansion of the surface car business, shelter roofs over the platforms have been substituted for the more elaborate station shed, expensive concrete foundation work has been avoided, and wooden construction has been substituted largely for steel. The estimates, however, provide for good work and the shelters, when erected, will not, in our opinion, be architecturally objectionable. The probable cost of such a temporary station will be about \$66,000, and the saving, in comparison with the original plans, should be in the neighborhood of \$372,000, an amount which will be available towards the construction of the permanent underground terminal.

Funds now in the treasury of the company, from the proceeds of its last bond issue, are lawfully applicable to the construction of a station upon this site, and, if seasonable deliveries of materials can be secured, it should be possible to complete the temporary station and have the elevated line from Sullivan square ready for operation by next January. This station will afford ample accommodations for the traffic until the permanent terminal can be constructed, and ultimately can be discontinued and abandoned, or else retained as a way station to accommodate local traffic from the vicinity, in substitution for surface car operation to Sullivan square, for the company ought not, in our judgment, to be required to maintain either a permanent or a way station at this point and also to provide parallel surface car facilities to Sullivan square over a route upon which so little traffic originates.

It has seemed wise, therefore, to the Commission not to approve the plans originally filed with this petition, providing for a permanent terminal station for this elevated extension upon the private land adjoining Broadway in Everett, and between Chemical lane and Brick Yard lane, but instead to approve a substitute plan for a temporary station upon the same site. As, however, the special legislation which is now being sought is essential to this substitute plan, it has seemed best to defer the

issuance of the final order and certificate of approval. If this legislation is secured this order and certificate will be issued at once; if it is not secured, the case may be reopened for further consideration.

For the Commission,

ANDREW A. HIGHLANDS,

MAY 14, 1917. [P. S. C. 1708]

Secretary.

Petition of the Boston Elevated Railway Company for approval of plan showing modified loop track construction and additional loading track at the temporary terminal station of the Everett extension of its railway.

Upon the petition of the Boston Elevated Railway Company, the annexed plan numbered 35811, showing modified loop track construction and additional loading track at the temporary terminal station of the Everett extension of its railway in Everett, the same being a modification or change of plan numbered 35804, approved by the Commission June 30, 1917, is hereby approved.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

NOVEMBER 1, 1917. [P. S. C. 1946]

Commissioners.

Petition of the Boston Elevated Railway Company for approval of plan No. 11890, showing changes in the Egleston Square station in Boston.

The annexed plan, marked "Boston Elevated Railway, Elevated & Subway Construction, Egleston Sq. Station, Proposed Widening of Northbound Platform, Bent 914 to 915, February 3, 1917, Plan No. 11890," is hereby approved.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

FEBRUARY 5, 1917. [P. S. C. 1670]

Commissioners.

Petition of the Boston Elevated Railway Company for certificate preliminary to the operation of certain changes in its elevated structure and station at Egleston square in the Roxbury district of Boston.

Examination having been made of certain changes in the elevated structure and station of the Boston Elevated railway at Egleston square in the Roxbury district of Boston, —

It is

Ordered, That the Commission hereby certify that all laws have been complied with preliminary to the operation of certain changes in the elevated structure and station of the Boston Elevated railway in the Roxbury district of Boston, consisting of an enlargement of the northbound train platform of said station, as shown on plan numbered 11890, on file in this office, and that said structure and station are in a safe condition for operation.

Attest: ANDREW A. HIGHLANDS,
MARCH 2, 1917. [P. S. C. 1698] Secretary.

Petition of the Boston Elevated Railway Company for approval of proposed location of parcel checking cabinets at certain elevated and subway stations.

After consideration, — it is

Ordered, That the approval of the Commission be hereby given to the location of parcel checking cabinets at the following stations of the Boston Elevated Railway Company: —

Dudley street terminal — elevated level;
Dudley street terminal — surface level;
Sullivan square terminal — elevated level;
Tunnel entrance, Old State House;
Massachusetts avenue subway station;
Harvard square surface waiting room;
Waiting shed on Causeway street;
Park street subway station;
South station under;
North station viaduct;
Adams square;
Atlantic avenue;
Bowdoin square — East Boston tunnel;
Scollay square under,

as described in the petition and shown on plans on file therewith in this office.

Attest: ANDREW A. HIGHLANDS,
APRIL 20, 1917. [P. S. C. 1676] Secretary.

SUNDAY TRAINS AND BOATS.

Petition of the Eastern Steamship Lines, Inc., for authority to run steamboats on the Lord's day.

It appearing, after consideration, that the public necessity, convenience, health and welfare may reasonably require, within the meaning and intent of the statute, the running of the steamboats of the petitioner within the waters of the Commonwealth on the Lord's day, — it is

Ordered, That authority be hereby given to the Eastern Steamship Lines, Inc., to run steamboats within the waters of the Commonwealth on the Lord's day during the year ending June 1, 1918, as set forth in the petition, with the understanding that the petitioner shall perform, in connection therewith, as a consequence of the authority herein granted, only such work as may prove to be necessarily incident to the running of said steamboats as aforesaid, subject, however, to the following conditions: —

1. Within the jurisdiction covered by this order, no intoxicating liquors shall be sold or furnished, and no disorderly conduct, gaming or other sport be permitted, either upon said steamboats or upon any premises owned or controlled by said petitioner.

2. The Commission reserves the right to revoke the authority hereby given at any time in its discretion without previous notice to said petitioner.

Attest: ANDREW A. HIGHLANDS,

MAY 11, 1917. [P. S. C. 1706-B]

Secretary.

By similar orders, schedules of regular Sunday boats, deemed to be necessary for the public accommodation, have been authorized as follows: —

Boston, Nahant and Pines Steamboat Company, Boston and Yarmouth Steamship Company, Ltd., Cape Cod Steamship Company, Merchants and Miners Transportation Company, Nantasket Beach Steamboat Company.

Petition of the Boston and Maine Railroad for authority to operate Sunday trains.

After consideration, — it is

Ordered, That the Boston and Maine Railroad be hereby authorized to run on the Lord's day during the period ending December 31, 1917, the trains specified in the petition dated June 20, 1917, and accompanying schedules, subject to the following conditions: —

1. No train shall be run as an excursion train.

2. The rates of fare on the passenger trains shall in no case be less than those charged on regular week-day trains between the same stations.

All previous orders authorizing the running of trains on the Lord's day on the Boston and Maine railroad are hereby revoked, such revocation to take effect when the above named schedules are put in force.

Attest: ANDREW A. HIGHLANDS,

JUNE 21, 1917. [P. S. C. 1522-B]

Secretary.

By similar orders, schedules of regular Sunday trains, deemed to be necessary for the public accommodation, have been authorized on the Boston and Albany railroad [P. S. C. 1612-B] the Boston and Maine railroad [P. S. C. 1522-C, 1522-D, 1540-T] and the New York, New Haven and Hartford railroad [P. S. C. 1511-B, 1511-C].

MISCELLANEOUS.

STREET RAILWAYS EARNING FIVE PER CENT DIVIDENDS.

Communication.

*To the Honorable the Bank Commissioner of the Commonwealth,
State House, Boston, Massachusetts.*

DEAR SIR: — Pursuant to the provisions of Acts of 1908, chapter 590, Part V, section 68, *Fifth*, and amendments thereof, and of section 2 of chapter 122 of the General Acts of 1917, we certify and transmit the following list of street railway companies incorporated in this Commonwealth which appear from the returns made by them and filed with the Commission for the year ended December 31, 1916, to have annually earned and properly paid without impairment of assets or capital stock an amount in dividends equal to at least five per cent upon their outstanding capital stock in each of the five preceding years: —

Boston and Revere Electric Street Railway Company
East Middlesex Street Railway Company
East Taunton Street Railway Company
Fitchburg and Leominster Street Railway Company
Holyoke Street Railway Company
Springfield Street Railway Company
Union Street Railway Company
West End Street Railway Company
Worcester Consolidated Street Railway Company.

We also certify that the bonds of the Boston Elevated Railway Company and of the Milford and Uxbridge Street Railway Company are legal investments of savings banks and institutions for savings by virtue of the provisions of chapter 273 of the Acts of 1915.

The statutes cited above, as construed by this Commission and its predecessor, do not require the Commission to determine whether the provisions for maintenance and depreciation made by street railway companies as shown by their returns have or have not been adequate.

For the Commission,

FREDERICK J. MACLEOD,

SEPTEMBER 14, 1917.

[P. S. C. 1618]

Chairman.

LOCOMOTIVE BOILER TESTS.

*Circular.**Modification of regulations for the Inspection and Testing of Locomotive Boilers.*

After consideration, it appearing that the Interstate Commerce Commission, in consideration of the present international crisis, has adopted certain modifications in the rules and instructions for inspection and testing of steam locomotives and tenders, — and that a regulation adopted by this Commission, in accordance with section 173 of Part II, chapter 463 of the Acts of 1906, as amended by chapter 348 of the Acts of 1909, relative to inspection of flexible staybolts with caps on the outside, is in conflict with Rule 23 of said modified rules and instructions of the Interstate Commerce Commission, — it is

Ordered, That the regulations for the inspection and testing of locomotive boilers adopted by this Commission October 31, 1914, under the provisions of section 173 of Part II, chapter 463 of the Acts of 1906, as amended by chapter 348 of the Acts of 1909, be hereby modified so that the rule for inspecting flexible staybolts with caps on the outside shall read as follows: —

Inspecting flexible staybolts with caps on the outside, caps must be removed at least once in every two years.

The above modification shall be effective at once and continue in force during the period of the war.

Attest: ANDREW A. HIGHLANDS,
OCTOBER 10, 1917. [P. S. C. 1549-H] *Secretary.*

OPERATION OF CARS — STREET RAILWAY.

Petition of the Boston Elevated Railway Company for approval of device for the automatic deceleration of elevated trains and cars.

After full consideration, it appearing that the petitioner desires to install upon its elevated structure in the vicinity of draw-bridges a certain device for the automatic deceleration of its trains and cars when approaching an open bridge, said device being in addition to existing safeguards, —

It is

Ordered, That the approval of the Commission be hereby given to the installation of said device for the automatic deceleration

of elevated trains and cars, as shown on plans numbered 6051 and 6056, showing proposed installation for protection of trains approaching the Charlestown drawbridge on the southbound track, and on plans numbered 6052 and 6058, showing proposed installation on either side of the drawbridge of the East Cambridge viaduct.

Attest: ANDREW A. HIGHLANDS,

MARCH 3, 1917. [P. S. C. 1664]

Secretary.

Petition of the Boston Elevated Railway Company for approval of device for the automatic deceleration of elevated trains and cars and deceleration track on the Charlestown bridge.

The annexed plans marked "Roll-6056, Boston Elevated Railway Co. Dept. of Maintenance of Way, Cross Section of Decelerating Track on Charlestown Bridge, North of Draw, Elevated Structure, January 1917," and "Roll-6051, Boston Elevated Railway Co. Dept. of Maintenance of Way, Plan of Decelerating Track on Charlestown Bridge, North of Draw, Elevated Structure, January 1917," are hereby approved.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

MARCH 9, 1917. [P. S. C. 1665]

Commissioners.

Petition of the Boston Elevated Railway Company for approval of device for the automatic deceleration of elevated trains and cars and deceleration track on the East Cambridge viaduct.

The annexed plans marked "Roll-6058, Boston Elevated Railway Co. Dept. of Maintenance of Way, Cross Section of Decelerating Track on East Cambridge Viaduct Either Side of Draw Bridge, January 1917," and "Roll 6052, Boston Elevated Railway Co. Dept. of Maintenance of Way, Plan of Decelerating Track on East Cambridge Viaduct Either Side of Draw Bridge, January 1917," are hereby approved.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

MARCH 9, 1917. [P. S. C. 1666]

Commissioners.

Petition of the Boston Elevated Railway Company for approval of modification of track construction upon the East Cambridge Viaduct extension of its elevated structure.

The annexed plan, numbered 4364, and dated June 6, 1911, showing modifications in the track construction upon the East Cambridge Viaduct extension of its elevated structure, said modifications being indicated in red upon said plan, is hereby approved, consent being given to the changes shown.

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

APRIL 25, 1917. [P. S. C. 1728] *Commissioners.*

Petition of the Boston Elevated Railway Company for approval of locking device for doors of articulated cars.

After consideration, — it is

Ordered, That the approval of the Commission be hereby given to a device for locking the outside vestibule doors of articulated surface cars, as shown on blue print numbered 13814, Department of Mechanical and Electrical Engineering, on file with the petition, upon condition that keys to operate the device shall be in the custody of both the motorman and conductor of each car when in operation.

Attest: ANDREW A. HIGHLANDS,
MARCH 26, 1917. [P. S. C. 1131] *Secretary.*

Petition of the Bay State Street Railway Company for authority to discontinue the maintenance of emergency tool chests at certain points on its railway.

After consideration, it appearing that in conformity with the recommendation of the Board of Railroad Commissioners in 1911, emergency tool chests were installed at 103 points on the lines of the petitioner's railway in this commonwealth; that in compliance with an order of said Board of Railroad Commissioners dated December 27, 1911, as extended July 18, 1912, fifty (50) per cent of said petitioner's cars were equipped with lifting jacks;

and that, in accordance with the provisions of chapter 598 of the Acts of 1913 all cars of the petitioner operated in this commonwealth were equipped with lifting jacks and other emergency tools, so that the maintenance of so large a number of said emergency chests on the said lines of railway appears to be no longer required in the interest of public safety, —

It is

Ordered, That the Bay State Street Railway Company be hereby exempted from the duty of maintaining emergency tool chests at certain places on the lines of its railway, upon the condition that said tool chests shall continue to be maintained at each of its car houses and at the following points: —

Malden square; Chelsea square; Salem: Town House square; Peabody square; Salem Willows; Gloucester: waiting room; Gloucester: Bay View; Ipswich: Market square; Winchester Center; Lowell: Merrimack square; Billerica Center; Wilmington Depot; Lawrence: transfer station; Haverhill: transfer station; Dummer Academy; Hingham square; Brockton: Marble's garage; Bridgewater Center; Fall River: waiting room.

Attest: ANDREW A. HIGHLANDS,

MARCH 3, 1917. [P. S. C. 1697]

Secretary.

APPROVAL OF CORPORATE NAME.

Petition of purchaser of the railway and property of the Norton and Taunton Street Railway Company for approval of change of corporate name.

It is

Ordered, That the order of the Commission dated December 21, 1916, approving the corporate name of the proposed new company as the Norton, Taunton and Attleboro Street Railway Company, be hereby modified and changed to the extent of changing the spelling of the word "Attleborough" to "Attleboro," so that the name of said company shall be Norton, Taunton and Attleboro Street Railway Company.

Attest: ALLAN BROOKS,

FEBRUARY 9, 1917. [P. S. C. 1277]

Assistant Secretary.

CIRCULAR.

*Inquests in Cases of Death by Accident on Railroads and Railways.
To the Police, District and Municipal Courts and Trial Justices of the
Commonwealth of Massachusetts.*

Section 14 of chapter 24 of the Revised Laws, as amended by chapter 496 of the Acts of 1912, and as further amended by chapter 94 of the General Acts of 1917, reads as follows: —

If a magistrate has reason to believe that an inquest to be held by him relates to the death by accident of a passenger or employee upon a railroad or electric railroad or a traveler upon a public or private way at a railroad crossing, or to a death by accident connected with the operation of a street railway or of a railroad for private use, he shall cause a verbatim report of the evidence to be made and sworn to by the person making it, and the report and the bill for services, after examination and approval in writing by the magistrate, shall be forwarded to the public service commission within thirty days after the date of the inquest. *When the magistrate has made his report therein he shall cause a copy thereof to be forwarded to said commission.* The bill when approved by said commission shall be forwarded to the auditor and be paid by the commonwealth, assessed on the several railroad, electric railroad or street railway corporations or other corporations, persons, firms or associations owning or operating the railroad, electric railroad or street railway or railroad for private use on which the accident occurred, and shall be collected in the manner provided in section three of Part I of chapter four hundred and sixty-three of the acts of the year nineteen hundred and six. The magistrate may, in his discretion, refuse fees to witnesses in the employ of the company upon whose railroad or railway the accident occurred.

Under the provisions of the above section of the Revised Laws as amended, *a copy of the report of the magistrate* in inquests relating to the death by accident of a passenger or employee upon a railroad or electric railroad or a traveler upon a public or private way at a railroad crossing, or to a death by accident connected with the operation of a street railway or of a railroad for private use, is required to be forwarded to the Public Service Commission.

By order of the Commission,

ANDREW A. HIGHLANDS,

MAY 25, 1917. [P. S. C. 1549-C]

Secretary.

SMOKE FROM LOCOMOTIVES.

Petition of the Board of Aldermen of the city of Pittsfield for abatement of smoke nuisance caused in the operation of engines on the New York, New Haven and Hartford and the Boston and Albany railroads in that city.

Memorandum.

This matter was referred to the Inspection Department of the Commission and as a result of its investigation assurance has been given by officials of both companies that as far as it is possible to do so the nuisance complained of will be abated. (See Inspector's report filed with the case.) The petitioners appear to be satisfied with the adjustment of their complaint and the case is placed on file with the understanding that it may be brought to the attention of the Commission again at any future time.

ANDREW A. HIGHLANDS,

JANUARY 1, 1917. [P. S. C. 1597]

Secretary.

CAR SPRINKLING.

Petition of the Bay State Street Railway Company for approval of operation of sprinkler cars in Lawrence.

After consideration, it appearing that a contract has been executed by the American Car Sprinkler Company and the Bay State Street Railway Company under date of March 31, 1917, providing for the operation of sprinkler cars in the city of Lawrence, — it is

Ordered, That the approval of the Commission under section 37 of Part III of chapter 463 of the Acts of 1906, be hereby given to said contract, upon the understanding that the manner in which the said sprinkler cars are operated shall be subject to supervision and further regulation by the Commission from time to time as the public interest may require; and that this order shall be subject to revocation at any time.

Attest: ANDREW A. HIGHLANDS,

APRIL 3, 1917. [P. S. C. 1717-A]

Secretary.

During the year additional orders have been issued approving contracts for the operation of sprinkler cars, as follows: —

Bay State Street Railway.

Malden, April 3, 1917 — American Car Sprinkler Company.
[P. S. C. 1717-B]

Boston Elevated Railway.

Malden, April 18, 1917 — American Car Sprinkler Company.
[P. S. C. 1736]

Somerville, May 4, 1917 — American Car Sprinkler Company.
[P. S. C. 1736-B]

Fitchburg and Leominster Street Railway.

Fitchburg, April 18, 1917 — American Car Sprinkler Company.
[P. S. C. 1733]

Northern Massachusetts Street Railway.

Fitchburg, May 2, 1917 — American Car Sprinkler Company.
[P. S. C. 1744]

Springfield Street Railway.

Springfield, July 23, 1917 — American Car Sprinkler Company.
[P. S. C. 1804]

Union Street Railway.

New Bedford, May 18, 1917 — American Car Sprinkler Company. [P. S. C. 1750]

CHARTER CERTIFICATES.

Petition of the Swansea and Seekonk Street Railway Company for certificate of compliance with laws preliminary to establishment as a corporation.

By order of the Public Service Commission, I, the undersigned, Executive Secretary and Clerk of said Commission, hereby certify that the requirements of law preliminary to the establishment of a street railway corporation, as set forth in chapter 463 of the Acts of 1906, and acts in addition thereto, have been complied with by the subscribers to the annexed articles of association for

the formation of the Swansea and Seekonk Street Railway Company.

CHARLES E. MANN,

OCTOBER 31, 1917.

[P. S. C. 1945]

Executive Secretary.

Petition of subscribers to agreement for formation of a corporation to be known as The Elizabeth Islands Telephone Company for certificate of organization and for approval of issue of capital stock to the amount of \$5,000.

MEMORANDUM.

As that part of the petition which relates to a certificate of organization is a matter that is not within the jurisdiction of the Commission and as the Elizabeth Islands Telephone Company has presented a petition (P. S. C. 1722) requesting approval of an issue of capital stock, the petition is dismissed.

Attest:

ANDREW A. HIGHLANDS,

APRIL 13, 1917.

[P. S. C. 1667]

Secretary.

CIRCULARS.

Car Loading.

To the Freight Shippers of Massachusetts.

In the present emergency, at the instance of the National Council of Defense, the railroads all over the country are urging shippers to load and unload cars quickly and also to *load the cars to the maximum carrying capacity*, regardless of "trade units" and minimum weights. To this movement the Public Service Commission of Massachusetts gives hearty support.

By loading to the maximum, the same cars will often do from 25 to 50 per cent more business.

By loading to the maximum, delays can be minimized at transfer points, where most of the serious delays now occur.

By loading to the maximum, accumulating shipments if necessary before ordering car, straight car loads can often be sent through to destination, entirely avoiding transfer delays.

By loading to the maximum, more empty cars can be returned directly and quickly to bring back raw materials into New England.

In some cases such loading is not practicable, but in general it is. Similar benefits can be secured by loading and unloading cars quickly. *Reasonable co-operation will cost you nothing and will give you and the entire country better service.*

PUBLIC SERVICE COMMISSION OF MASSACHUSETTS,

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

AUGUST 1, 1917.

Commissioners.

Filing of Contracts and Agreements.

To the Street Railway Companies of the Commonwealth.

In circulars dated September 14, 1915, and September 20, 1915 (P. S. C. 1049-B and 1049-D) notification was given to street railway companies respecting the filing with the Commission of copies of all leases and operating contracts made during each year with other street railway companies, and "also copies of all written contracts and agreements, whatever their nature may be, which are made with other companies or individuals" with the exception of "copies of informal contracts relative to the purchase of materials or supplies and involving an expenditure of less than \$5,000." The Commission also required the filing of copies or the terms of certain other contracts or agreements in force on the date of its circular.

The Commission desires to modify its requirements with respect to the filing of copies of contracts as specified in the circulars above referred to and hereby notifies companies of the cancellation of such portions thereof as may be inconsistent with its modified requirements which have now been adopted, as follows: —

1. Copies of all leases and operating contracts made during each year with other street railway companies together with copies of all contracts for the purchase of power.
2. Copies of all important contracts relating to the purchase of rolling stock and to construction work, *to be filed on request from the Commission at short notice.*

It will facilitate the work of the Commission if, in complying with the first provision, companies will file, as heretofore, copies

of leases, operating and power contracts as they may be made from time to time, and if, in entering into contracts covered by the second provision, companies make and retain an additional copy in order to be able promptly to file the same with the Commission when requested so to do.

ANDREW A. HIGHLANDS,

JULY 7, 1917. [P. S. C. 1549-D]

Secretary.

MEMORANDUM — JOINT BOARD.

In the matter of the abolition of certain grade crossings in the Charlestown district of the City of Boston under the provisions of Chapter 529 of the Acts of 1912.

Memorandum.

Under the provisions of chapter 529 of the Acts of 1912, the Public Service Commission and the Directors of the Port of Boston were constituted a Joint Board, with authority to prescribe the manner and limits of certain alterations of grade crossings in the Charlestown district of Boston.

In this matter public hearings were held by the Joint Board in 1913 and 1914, but owing to certain conditions then existing which are shown in detail in the record, it was not deemed expedient to make an immediate determination of the manner and limits of the alterations to be made pursuant to the provisions of the statute. Owing to the inability of the Boston and Maine Railroad to finance the large expenditures which would be involved in the alterations contemplated, to the necessity of conserving labor and materials during the period of the war, and to the fact that there has been no evidence of any public demand for the completion of the proposed alterations at this time, the matter has remained in abeyance without formal action thereon. On December 7, 1917, a meeting of the Joint Board, consisting of the Public Service Commission and the Commission on Waterways and Public Lands, successor of the Directors of the Port of Boston, was held, and it was unanimously voted that the case be placed on file, upon the understanding that it shall be subsequently taken up upon the motion of the Joint Board, or at the request of any party in interest at the conclusion of the war, or upon evidence of a substantial change of present conditions.

FREDERICK J. MACLEOD,

Chairman of the Joint Board.

DECEMBER 18, 1917. [P. S. C. 239]

SUPPLEMENTAL ORDERS IN RE BONDS.

Petition of the Milford and Uxbridge Street Railway Company for a supplemental order approving the extension of the maturity of an issue of 5 per cent mortgage bonds of the petitioner to the amount of \$335,000, for a term of five years and an increase in the rate of interest upon the said bonds to the amount of 7 per cent per annum; and for amendments of orders of the Board of Railroad Commissioners by which the issue of the said bonds was originally approved.

On December 27, 1901, the Board of Railroad Commissioners approved an issue by the Milford and Uxbridge Street Railway Company of coupon or registered bonds to an amount not to exceed \$50,000, payable on the first of January, 1918, bearing interest at the rate of 5 per cent per annum and secured by a mortgage on the railway equipment, franchises and other property, real and personal, of the company, for necessary and lawful purposes and as reasonably requisite therefor, and by subsequent orders issued on January 5, 1903, and September 1, 1910, the said Board approved the issue by the petitioner of additional similar bonds to the amounts of \$200,000 and \$85,000 respectively. Said bonds, to the aggregate principal amount of \$335,000, were issued accordingly and are now outstanding and will mature on the first of January, 1918. It now appearing that owing to the present financial situation arising from war conditions, it is impracticable, if not impossible, for the petitioner to issue and market new bonds or other securities at a fair or reasonable rate of interest for the purpose of retiring or refunding its outstanding bonds, and that it is necessary and advisable for the petitioner to extend the maturity and to increase the rate of interest upon the bonds, as extended, in order to secure the consent of the holders of the bonds to such extension, — it is

Ordered, That the approval of the Commission be hereby given to the extension of the maturity of the issue of bonds of the Milford and Uxbridge Street Railway Company to the amount of three hundred thirty-five thousand dollars (\$335,000), specified in the said orders of the Board of Railroad Commissioners, for a term not exceeding five years and to the increase in the rate of interest upon the same to an amount not exceeding seven per cent (7%) per annum, subject to the right of the said Milford and Uxbridge Street Railway Company to call all, but not less than all, of said bonds at par on the first day of Janu-

now appearing that owing to the present financial situation, arising from war conditions, it is impracticable, if not impossible, for the petitioner to issue and market new bonds or other securities at a fair or reasonable rate of interest for the purpose of retiring or refunding its outstanding bonds, and that it is necessary and advisable for the petitioner to extend the maturity and to increase the rate of interest upon the bonds, as extended, in order to secure the consent of the holders of the bonds to such extension, — it is

Ordered, That the approval of the Commission be hereby given to the extension of the maturity of the issue of bonds of the Milford, Holliston and Framingham Street Railway Company to the amount of one hundred sixty-five thousand dollars (\$165,000), assumed by the Milford and Uxbridge Street Railway Company and specified in the above-named orders of the Board of Railroad Commissioners, for a term not exceeding five years, and to the increase in the rate of interest upon the same to an amount not exceeding seven per cent (7%) per annum, subject to the right of the Milford and Uxbridge Street Railway Company to call all, but not less than all of said bonds at par on the first day of January, 1920, or on any interest payment date thereafter, and otherwise upon the terms and conditions of the proposed supplemental indenture to be made between the Milford and Uxbridge Street Railway Company and the American Trust Company as trustee, a copy of which is on file with this Commission; and the orders of the Board of Railroad Commissioners hereinbefore specified made under dates of December 22, 1897, and July 3, 1902, are hereby supplemented and amended accordingly.

Attest: CHARLES E. MANN,
Executive Secretary.

DECEMBER 13, 1917. [P. S. C. 1985, R. R. C. 1576]

RAILROAD SERVICE.

Petition of residents of the towns of Hopkinton and Ashland that train No. 29, leaving Boston at 5.00 P.M. on the Boston and Albany railroad, stop at Ashland.

Ashland is a town of about 2,000 inhabitants located 2.85 miles west of Framingham, or 24.21 miles west of Boston, on the main line of the Boston and Albany Railroad. Hopkinton is a town of about 2,500 inhabitants located some 4 miles south-

west of Ashland on a branch of the New York, New Haven and Hartford railroad which runs between Ashland and Bellingham Junction. Passenger service on this branch of the New York, New Haven and Hartford railroad consists of a mixed train once a day and is of little benefit to Hopkinton, so far as travel between Hopkinton and Ashland is concerned.

Framingham, Ashland and Hopkinton are also served by the Middlesex and Boston street railway, which runs a half-hourly service from 3.30 P.M. to 8.30 P.M. between these towns.

There are about eighty commuters residing at or between Hopkinton and Ashland who use the trains of the Boston and Albany railroad to Boston. The people of Ashland and Hopkinton now have three trains leaving Boston in the late afternoon — one at 4.15 P.M., running express to Riverside, one at 5.15 P.M., running express to Wellesley Farms, and one at 5.52 P.M., running express to Framingham. These trains arrive at Ashland at 5.08 P.M., 6.05 P.M. and 6.29 P.M., respectively. In addition, they have six other trains leaving Boston between 4.00 P.M. and 6.20 P.M., stopping at Framingham, from which point they are enabled to connect with the cars of the Middlesex and Boston street railway for either Ashland or Hopkinton.

The petitioners request that train No. 29, leaving Boston at 5.00 P.M., stop at Ashland, and contend that their request is reasonable inasmuch as the only express service they now have in the late afternoon is the train leaving Boston at 5.52 P.M., which they state is too late for those who leave their place of business at 5.00 P.M., and that the 4.15 P.M. and 5.15 P.M. trains, which stop at the Wellesleys, Natick and Framingham, are purely local trains. They further state that the principal reason for asking that the 5.00 P.M. train stop at Ashland is that it is the only train that would make close connection with the Middlesex and Boston trolleys to other nearby points.

The train which the petitioners desire to have stopped at Ashland in order that they may make a closer connection with the trolleys going to Hopkinton and Woodville leaves Boston at 5.00 P.M. and runs express to Worcester, stopping only at Framingham, a junction point with other lines. This train is intended to give patrons of the road, living in the towns between Worcester and Springfield, late afternoon express service from Boston and it is the only such service they now have. Any additional stop made by the train between Boston and Worcester would only impair the service which it is intended to furnish.

The trains leaving Boston at 4.15 P.M., and 5.15 P.M. and stopping at Ashland cannot be regarded as purely local in character as they run express to Riverside and Wellesley Farms, respectively, and stop at only four or five stations out of fifteen between Boston and Ashland, a distance of but twenty-four miles. It is urged that patrons of these trains are unable to make close connections with the trolleys at Ashland, but it can hardly be expected that the many other communities now served by train No. 29 should be inconvenienced in order that a close connection be made with the local trolley at Ashland. As a general proposition the arrangement of steam railroad service cannot be subordinated to the time schedules of street railway operation. Furthermore, train No. 29 arrives at Framingham at 5.33 P.M. and by an arrangement with the street railway company makes close connection with the trolleys at that place.

The Commission is of the opinion that the service now furnished by the Boston and Albany Railroad between Boston, Framingham and Ashland is reasonably adequate and that the stopping of train No. 29, as requested by the petitioners, would result in impairment of the through service to Worcester and Springfield which this train is especially intended to furnish. It is therefore,

Ordered, That the petition be dismissed.

For the Commission,

ALLAN BROOKS,

FEBRUARY 8, 1917. [P. S. C. 1481]

Assistant Secretary.

PRIVATE FREIGHT RAILROAD.

Petition of the City Iron Foundry for consent to the construction and maintenance of private railroad track at grade across Quebec street in Lowell.

It appearing that the county commissioners of Middlesex county have adjudged that public necessity requires that the proposed railroad cross the highway at a level therewith; that the municipal council of the city of Lowell has consented thereto and that the same is consistent with the public interests, — it is

Ordered, That the consent of the Commission be hereby given to the construction and maintenance by the petitioner of a

railroad for private use in the transportation of freight, to be operated by steam power upon and across a travelled way known as Quebec street, in the city of Lowell, as shown upon a plan on file with the petition.

This consent is given upon the condition that a flagman shall display a flag by day and a lantern by night whenever an engine, car or train is approaching and while it is passing over said crossing, and that no engine, car or train shall pass at a greater speed than four (4) miles an hour.

Attest:

ALLAN BROOKS,

OCTOBER 19, 1917. [P. S. C. 1922]

Assistant Secretary.

SPECIAL REPORTS TO THE GENERAL COURT.

REPORT OF THE PUBLIC SERVICE COMMISSION UNDER RESOLVE
OF THE GENERAL COURT FOR INVESTIGATION OF THE USE
OF THE ATLANTIC AVENUE ELEVATED RAILWAY STRUCTURE
IN BOSTON.

*To the Honorable the Senate and House of Representatives in General Court
Assembled.*

Chapter 148 of the Resolves of the General Court of 1916
reads as follows: —

RESOLVE DIRECTING THE PUBLIC SERVICE COMMISSION TO INVESTIGATE
THE USE OF THE ATLANTIC AVENUE ELEVATED RAILWAY STRUCTURE
IN THE CITY OF BOSTON FOR THE TRANSFER OF RAILROAD EQUIP-
MENT.

Resolved, That the public service commission is hereby directed to investigate the condition of the elevated railway structure in Atlantic avenue in the city of Boston, in order to ascertain the feasibility of using the structure to carry railroad equipment. It shall prepare plans for any necessary strengthening or widening of the structure and also plans for a connection of the tracks on said structure with wharves and warehouses and with the tracks of the Boston and Maine, Boston and Albany and New York, New Haven and Hartford railroads. It shall prepare estimates of the expense of adopting said plans, and shall report thereon to the next general court on or before the fifteenth day of January in the year nineteen hundred and seventeen.

In conformity with the terms of this resolve, the Commission has made the investigations indicated and submits herewith plans and estimates covering the studies made. In conducting the investigation, what may be designated as the scheme portion was assigned to Engineer Henry W. Hayes of the Commission, and the preparation of the estimates of the cost in making necessary changes in and additions to the existing elevated structure was assigned to Bridge and Signal Engineer Lewis E. Moore.

Chapter 500, section 7, of the Acts of 1897, under authority of which the elevated structure was constructed in Atlantic avenue, reads as follows: —

Said corporation may construct that portion of its elevated railroad over that part of the seventh location described in section three of this

act between Albany street and Merrimac street in the city of Boston, of such strength and character that it will be suitable for the hauling of railroad cars thereon; and said corporation is hereby authorized to haul railroad cars of the corporation thereon.

In the report of the Terminal Commission on Terminal Facilities (Senate Document No. 401, dated April 1, 1916) the following passage occurs on page 61:—

The elevated structure in Atlantic avenue was built to permit the carrying of railroad cars, including Pullman. It was intended to be so used. In New York a connecting railroad is being built at an expense of more than \$25,000,000; connecting railroads exist elsewhere. Why should we not use the facilities we have? No definite steps have been taken for the use of this elevated structure by railroad cars, and this Commission has been without a sufficient appropriation to prepare plans for such use, but these tracks ought to be so used if possible, and we recommend the passage of the accompanying resolve.

(The resolve referred to is substantially that quoted at the beginning of this report.)

In the report of Edmund K. Turner, consulting engineer of the Board of Railroad Commissioners, printed in its report for 1899, the following passage occurs at the bottom of page 96:—

The elevated structure is designed to carry a live load of 2,500 pounds per lineal foot of track or a concentrated load of 20,000 pounds on one axle.

By reference to section 7, chapter 500, Acts of 1897, quoted above, it will be seen that the act reads "Said corporation *may* construct," etc. The construction of that portion of the elevated railway under discussion, of sufficient strength to carry railroad traffic was therefore optional with the railway and not mandatory upon them. As a matter of fact, according to the engineer of structures of the Boston Elevated railway, the structure was designed to carry a train of 50-ton cars each 40 feet long and having a truck wheel base of $5\frac{1}{2}$ feet and a distance center to center of trucks of $25\frac{1}{2}$ feet. The modern Pullman car weighs 150,000 pounds, and is supported on two six-wheel trucks. Each axle then carries 25,000 pounds, and there are three of them at each end of the car, spaced approximately 5 feet 5 inches center to center. The heaviest freight equipment in regular service which has come to our knowledge is the Pennsylvania coal car of 140,000 pounds capacity. The actual total weight of a loaded car of this type has been found to run as high as 209,000 pounds. If two of these cars are coupled together there will be four axles

all spaced 6 feet center to center, with a total load on each axle of 52,250 pounds.

From the above statement of loads for which the structure was designed, and after giving due consideration to the weight of modern equipment, it appears that the structure is not at the present time adequate to carry railroad loads, nor was it designed with that end in view.

The computation of the strength of certain typical portions of the structure as constructed shows it to be inadequate for such loads. Its construction is such that it is impractical to attempt to strengthen it, and such parts as are of insufficient strength will require rebuilding.

The columns and foundations were designed to carry three elevated railway tracks, which gives them a greater proportional strength than the other portions of the structure. The elevated structure has been well maintained and has not lost by corrosion. It is practically as strong now as it was when built. The schemes as drawn up are two in number. The two schemes are alike so far as the approach to the Elevated structure from the Boston and Albany tracks alongside the South station and the approach in Dorchester avenue and Summer street from the New York, New Haven and Hartford tracks are concerned.

On account of the impracticability of operating freight trains during the hours of passenger train operation if scheme No. 1 were adopted, scheme No. 2, which provides for independent freight train operation on separate tracks at any time, was drawn up and is herewith submitted.

Scheme No. 1, which is the one outlined in the resolve, contemplates the reconstruction of the present tracks and their supports substantially in their present location. The tracks are gauntleted at the stations in order that the freight cars may be run a sufficient distance from the edge of the station platforms to clear them. The approach from the Boston and Maine tracks joins the remodeled elevated structure at a point near Beverly street.

Scheme No. 2 contemplates the addition of a separate track or tracks in Atlantic avenue between the existing tracks and the water front side of Atlantic avenue, and the construction of an independent approach from the Boston and Maine tracks at the North station. This independent approach, as shown on the plan, leaves Commercial street at the corner of Charter street, and proceeds over private land near the water front, crossing the Boston Elevated tracks at grade on the Charlestown bridge approach, thence passing through Lovejoy place, crossing Beverly

street and curving to the right and downward to a junction with the Boston and Maine.

The foundations will be loaded up to the limit in scheme No. 1 with the full live load on the new structure. It is, however, improbable that this full live load will occur, except at very infrequent intervals, and it seems to be better judgment to use the existing foundations as they are without attempting to strengthen them.

In the accompanying estimate of cost the approach from the New York, New Haven and Hartford railroad tracks on Dorchester avenue and Summer street has been computed separately, as it is common to both schemes.

It is believed that the existing Boston Elevated power plants have sufficient capacity to handle the freight trains which will use the structure. No estimate of the cost of the required electric locomotives has been made.

The estimated cost of each spur siding from the structure to the street line is about \$5,500 on the average. No attempt has been made to estimate the cost of sidings on private land, with the necessary strengthening of the wharves and warehouses to carry railroad cars at the level of the elevated tracks because of the widely varying conditions which exist. The following are detailed estimates of the schemes mentioned herein:—

SCHEME No. 1.

Structural steel work,	\$1,703,000
Signal changes,	10,000
Grading,	1,650
Masonry,	1,020
Track,	136,938
Third rail,	13,750
Distribution system,	—
	<hr/>
	\$1,866,358
Engineering and contingencies, 20 per cent,	372,642
	<hr/>
Total,	\$2,239,000
Land damages,	30,000
	<hr/>
	\$2,269,000
Dorchester Avenue connection to New York, New Haven and Hartford Railroad,	748,000
	<hr/>
	\$3,017,000
18 sidings to wharves and warehouses, portion within the street lines only,	99,000
	<hr/>
	\$3,116,000

SCHEME No. 2.

Structural work and foundations,	\$1,489,900
Signals,	20,000
Grading,	1,650
Masonry,	1,020
Track,	110,960
Third rail,	24,125
Distribution system,	60,550
Total,	\$1,708,205
Engineering and contingencies, 20 per cent,	341,795
	<u>\$2,050,000</u>
Land and land damages,	580,000
Total,	\$2,630,000
Dorchester avenue connection,	748,000
Grand total,	<u>\$3,378,000</u>
17 sidings to wharves and warehouses, portion within the street lines only,	93,500
	<u>\$3,471,500</u>

DORCHESTER AVENUE APPROACH.

Structural work and foundations,	\$297,000
Signals,	3,000
Grading,	3,350
Masonry and piles,	18,000
Track and special work,	21,742
Third rail,	7,000
Distribution system,	15,000
Total,	<u>\$365,092</u>
Engineering and contingencies, 20 per cent,	72,908
Total construction,	<u>\$438,000</u>
Land damages,	310,000
Grand total,	<u>\$748,000</u>

Respectfully submitted,

FREDERICK J. MACLEOD,
EVERETT E. STONE,
JOHN F. MEANEY,
JOSEPH B. EASTMAN,
CHARLES A. RUSSELL,

Commissioners.

COURT DECISIONS.

SUPREME JUDICIAL COURT.

NATIONAL DOCK AND STORAGE WAREHOUSE COMPANY v. BOSTON AND MAINE RAILROAD.

(227 MASS. p. 197.)

OPINION. JANUARY 24, 25, 1916. — MAY 26, 1917.

RUGG, C.J. This is a petition for a writ of mandamus to compel the defendant to comply with orders of the public service commission, made upon a petition brought by the present petitioner against the present respondent alleging that discriminatory rates were charged by it against the petitioner. Summarily stated, that contention was based upon absorption by the respondent of transfer charges from the Commonwealth pier, to which the tracks of the respondent do not run, made to it by the New York, New Haven, and Hartford Railroad Company and the Union Freight Railroad, in order to transport freight received at the Commonwealth pier on the water front in Boston to the tracks of the Boston and Maine Railroad, while the respondent refused to absorb the transfer charges made by the Boston and Albany Railroad Company from the petitioner's wharf and dock to the tracks of the respondent, its tracks not running to the petitioner's wharf and dock.

The Commonwealth pier has been built within a few years at great expense by the Commonwealth, for the purpose of enlarging the shipping facilities of the port of Boston, and in size, equipment and accommodations for seagoing vessels is, at least in some respects, by far the finest pier on the harbor front of Boston. It was constructed and managed, so far as concerns this case, by a State board known as the directors of the port of Boston. The petitioner owning a wharf and pier on Boston Harbor, is a competitor with the Commonwealth pier for freight business arriving on foreign steamers at the port of Boston.

After a hearing, the public service commission found: "that the rates on import and export freight destined to or moving from points on the Boston and Maine Railroad in Massachusetts

from and to the wharves and docks of the petitioner are unjustly discriminatory as compared with the rates on like traffic between the same Boston and Maine points and the Commonwealth pier." The commission did not then make further order, but found that the absorption by the respondent of the switching charges between the Commonwealth pier and its own tracks was due to a contract entered into by it and the directors of the port of Boston and other railroads under date of July 1, 1912, and that the question of the proper rates was one of complexity and difficulty arising out of conflicting interests between the several railroads involved and the Directors of the Port of Boston and perhaps others, and granted a reasonable period, not exceeding ninety days, for the parties in interest to adjust their differences arising out of the finding of the commission. No adjustment having been made, it entered another order in March, 1915, of the tenor following: "*Ordered*, That the respondent, the Boston and Maine Railroad, be directed to file with this commission within thirty days from the date hereof, tariffs to become effective thirty days after filing, unless otherwise ordered by the commission, which will discontinue the unjust discrimination which the commission in these proceedings has found to exist, in so far as such discrimination arises from the rates charged by the Boston and Maine Railroad on intrastate movements of freight to and from the premises of the petitioner from and to points on the Boston and Maine Railroad in Massachusetts as compared with the rates on like traffic between the Commonwealth pier in South Boston and the same points."

Thereafter the respondent filed new schedules of tariffs with the public service commission designed to remove the discrimination of which complaint is made here, by cancelling the rates to Commonwealth pier. Before these tariffs could take effect, the Commonwealth brought suit in the Supreme Judicial Court for Suffolk County to enforce specific performance of the contract of the respondent with it, dated July 1, 1912, and to restrain the respondent from breaking that contract by cancelling the rates to the Commonwealth pier provided for by that contract. An injunction issued on or about July 16, 1915, which appears to be still in force and which suspended the operation of the rates of the new schedules of tariffs and forbade in substance the making of any additional charge respecting freight at Commonwealth pier above that provided in the contract. The respondent complied with the terms of the injunction. Thereafter, on Septem-

ber 13, 1915, the public service commission wrote to the respondent referring to its previous orders, to the filing of the new schedules of tariffs by the respondent, and to the injunction against their enforcement; it recited that these facts had been called to its attention by the present petitioner at a public hearing at which it asked the commission to enforce its previous order; and that the commission recognized that the respondent, while the injunction remained in force, could not remove the discrimination by ceasing to absorb the transfer charges to and from Commonwealth pier, and could only remove that discrimination by absorbing the transfer charges made by the Boston and Albany Railroad Company for freight transported to and from the docks of the petitioner to the tracks of the respondent, and that this was the only way in which the respondent could comply with the order of the public service commission. It then proceeded, "Whether such a compliance would result in unreasonably low rates for the service rendered it is unnecessary for the Commission at this time to decide." It directed the respondent to comply with its order and stated that in the event of failure on its part the commission would proceed to enforce its order. On October 13, 1915, the commission requested the Attorney General to take steps to enforce its order under St. 1913, c. 784, § 28. The Attorney General declined to take such steps on the ground that in his opinion some discretion was vested in him under the statute and it would be highly inconsistent for him to institute such a proceeding while in other proceedings he was in his official capacity making contentions that the contract of the defendant with the port directors was valid and constituted no discrimination. The soundness of that contention need not now be considered. The present petition is brought to enforce the order or orders of the public service commission.

These orders and decisions as a whole are not within the jurisdiction of the public service commission under the facts here revealed and ought not to be enforced now. It is provided by St. 1913, c. 784, § 22, as to commerce within the State that "Whenever the commission shall be of opinion . . . that the rates, fares or charges or any of them demanded, exacted, charged or collected by any common carrier . . . or the regulations or practices of such common carrier affecting such rates, are unjust, unreasonable, unjustly discriminatory or unduly preferential . . . the commission shall determine the just and reasonable rates, fares and charges to be charged for the service to be per-

formed." The discrimination in the case at bar rested upon a rate charged by the respondent. It had no other basis. It was not a regulation or practice as distinguished from a rate. The very question in the present posture of the case is the compensation which the respondent shall receive for the service of transportation of freight between the petitioner's wharf and pier and points within the Commonwealth on the respondent's line of railroad. Thus, for this reason if for no other, *Pennsylvania Co. v. United States*, 236 U. S. 351, 361, 362 and *Louisville & Nashville Railroad v. United States*, 238 U. S. 1, 20, are distinguishable from the case at bar.

It was the duty of the public service commission under the statute, since under the circumstances here disclosed the discrimination arose out of a rate, to "determine the just and reasonable rates" to be charged. St. 1913, c. 784, § 22. An order baldly directing a carrier to remove a discriminatory rate when the only possible way in which that discriminatory rate can be removed is by making a substantial reduction in its rates, and, where there is no election to raise some rates or reduce others, without at the same time determining what is a reasonable rate, is not an exercise of the jurisdiction conferred. The determination by the commission that whether compliance with its earlier orders "would result in unreasonably low rates for the service rendered it is unnecessary for the commission at this time to decide," was not in conformity to law. The respondent had attempted to comply with the order of the commission in another way, which involved no reduction in rates. It was prevented by a mandate of the court from carrying out this removal of discriminatory rate. When the orders of the commission according to its own statement required a reduction of rates, it must make a further decision based on evidence that such reduced rate would be fair and reasonable and not confiscatory before its earlier orders would be ripe for enforcement. The wisdom of this requirement of the statute is illustrated by the case at bar. If the respondent cannot absorb into its regular rate the charges made by the Boston and Albany Railroad Company for transportation from the wharf and dock of the petitioner to the Boston and Maine tracks without deprivation of adequate compensation for the service it would be required to render, in the transportation of freight from that source, serious questions would arise. The commission, however, made no finding upon this point. It has not considered in any respect the questions

which ought to be considered, if the respondent would not receive a compensatory rate by complying with its orders in the only way in which now it can comply with those orders. See in this connection *National Dock & Storage Warehouse Co. v. Boston & Maine Railroad*, 38 I. C. C. Rep. 643.

There is nothing at variance with this conclusion in St. 1906, c. 463, Part II, § 201. It appears from the record that there are numerous other wharves at the port of Boston situated similarly to that of the petitioner. The absorption of transportation charges from these wharves to its tracks by the respondent may or may not be a grave matter to it and may result in its doing that business at a loss. Whether the contract entered into between the respondent and the directors of the port of Boston and the other carriers is unwise, or open to other objections, are matters not now before us and are left undetermined. It cannot be said, from what is set forth in the record, that the question of absorbing the freight charges for transportation from the petitioner's wharf to its tracks is negligible.

Since the order which is sought to be enforced is not an order issued in conformity to the statutory power of the commission under all the conditions here disclosed, it cannot be enforced at this time. It is not necessary to decide any other question either of form or substance because on this ground the entry must be

Petition dismissed.

SUPREME JUDICIAL COURT

CITY OF FALL RIVER ET AL.

v.

PUBLIC SERVICE COMMISSION ET AL.

SAME

v.

BAY STATE STREET RAILWAY COMPANY.

(228 MASS. 575; 117 N. E. 915.)

OPINION. DECEMBER 8, 1917.

BRALEY, J. It appears among the terms of the grant of location to the Globe Street Railway Company, to whose franchises and obligations so far as involved in the cases at bar the defendant company has succeeded, that the company was "to construct, electrically equip, and maintain its tracks . . . on Slade's ferry bridge . . . according to the plans on file," subject to the conditions that the company, its successors, and assigns, "shall

so long as its tracks continue to be on said . . . bridge keep in repair at its own expense all of the roadway of said bridge for its entire length to the satisfaction" of the city engineer and the surveyor of highways, and shall furnish a bond "for the faithful fulfilment of the terms and conditions of this order." The order was passed October 21, 1895, and the bond having been given and approved, and the location having been accepted and continuously used as a part of its railway system, the company and its successors were bound to comply with this condition. Pub. Stat., chap. 113, § 17; Rev. Laws, chap. 112, § 11; *Worcester v. Worcester Consol. Street R. Co.*, 192 Mass. 106, 113, 115, 78; N. E. 222. But as pointed out in *Springfield v. Springfield Street R. Co.*, 182 Mass. 41, 64 N. E. 577, the legislature may modify or annul a location of this nature without violation of any constitutional provision. By Stat. 1898, chap. 578, § 11, street railways were relieved "from obligation thereafter to keep any portion of the surface material of streets, roads, and bridges in repair, unless the obligation so to do had been imposed in a grant of an original location, which the statute defined to mean the first location granted to the company in the city or town as to whose streets, roads, or bridges there might be a question." *Worcester v. Worcester Consol. Street R. Co.*, 182 Mass., 49, 52, 64 N. E. 582. The agreed facts show that the location in question was not the first or original location, and neither the company nor its successor was required, after the passage of the statute, to reimburse the plaintiff city for expenditures in making repairs. The city, however, contends that Stat. 1911, chap. 552, superseded Stat. 1898, chap. 578, § 11, by expressly requiring the company and its successors to make such repairs as might be needed. Stat. 1911, chap. 552 amends Stat. 1910, chap. 654, § 6, and when the original and amendatory acts are read in conjunction it is manifest that Stat. 1910, chap. 654, § 1, provides solely for "the reconstruction of the joint railroad and highway bridge commonly known as Slade's ferry bridge . . . the Old Colony Railroad Company, its successors or assigns, shall reconstruct said Slade's ferry bridge, and locate the same at a point northerly thereof, but not exceeding 100 feet therefrom, in the manner hereinafter stated. . . . The said reconstructed bridge shall be of sufficient width to provide two tracks for the railroad so that two street cars may conveniently meet and pass each other thereon while going in opposite directions; and due provision shall be made for the accommodation of foot passengers."

It is only upon completion of the new bridge authorized by the statute that § 6 as amended becomes operative, and the old bridge built under Stat. 1872, chap. 295, is to be discontinued for "highway and railroad purposes." It is not contended that the new bridge has been built, with the approaches and ways, and opened for use as provided in Stat. 1910, chap. 654, as amended, which contains no repeal of Stat. 1906, chap. 463, pt. 3, § 79, recodifying Rev. Laws Chap. 112, § 44, which re-enacted Stat. 1898, chap. 578, § 11. And Stat. 1911, chap. 552, is applicable, that "any street railway company owning the tracks on the highway part of the old Slade's ferry bridge, shall have the right to lay double tracks on the highway part of said reconstructed bridge and to connect its tracks with the same on both sides of the river . . . subject, however, to all the conditions as to fares and other matters mentioned in the grant of location to the Globe Street Railway Company by the board of aldermen of the city of Fall River . . . on the old Slade's ferry bridge, which are hereby approved and confirmed; and all successors or assigns of said Globe Street Railway Company shall be bound by and subject to the said conditions."

(1, 2) The grant of location contained the further condition the performance of which also was secured by the bond, that the railway company will sell six tickets for a sum not exceeding 25 cents "each of which shall entitle a passenger to one ride over said company's lines in this city on as favorable conditions as their passengers are now carried. The fares for passengers without tickets are not to be affected by the above rate for tickets." And this provision has not been complied with by the company since March 15, 1917. But Stat. 1913, chap. 784, with certain exceptions not applicable in the present case, placed the subject of fares on all street railways under the exclusive control of the Public Service Commission. It provides in § 29 that "this act shall be deemed and construed as a remedial act and in enlargement and extension of all previous acts and existing laws conferring upon or vesting in the Commission any jurisdiction, powers or discretion with respect to any subject or matter treated in this act," and " . . . all acts and parts of acts which would in any way limit or prevent the exercise to the fullest extent of any of the jurisdiction, powers, authority or discretion delegated herein to the Commission are hereby repealed."

The statute being constitutional and the powers of the Commission plenary over the regulation and establishment of fares on

street railways, independently of whatever conditions may have been imposed in antecedent grants of location by selectmen of towns or municipal boards (*Board of Survey v. Bay State Street R. Co.*, 224 Mass. 463, 469, 113 N. E. 273), the decision under which the "4½-cent ticket sold in strips of six tickets for 25 cents in the city of Fall River" was withdrawn and the refusal to give the rulings requested by the plaintiff disclose no errors of law. If from the allegations of the bill, admitted by the demurrer, it is to be assumed that an order was entered in conformity with the decision, the inquiry under Stat. 1913, chap. 784, §§ 20, 21, whether an increase of fare is necessary "in order to obtain a reasonable compensation for the service rendered," is primarily a question of fact. It is not limited to any particular part of the system which, if operated by itself, might be found to be more than self-sustaining. And the question whether the company should be permitted to withdraw the commutation tickets called for the exercise of the sound discretion and judgment of the Commission, based on the evidence of the company's financial condition, and ability to serve efficiently the public dependent upon the maintenance of its entire system of intercommunication and transportation. We are unable to perceive on the record before us any conclusions of fact, in so far as conclusions of fact are involved, which were unlawful. It is only where " . . . any rulings or orders of the Commission . . . are unlawful," that this court in equity can "annul, modify or amend" them "to the extent only of such unlawfulness." Stat. 1913, chap. 784, § 27; *Bulkeley v. New York, N. H. & H. R. Co.*, 216 Mass. 432, 433, 103 N. E. 1033. The plaintiff, on whom the burden rests, having failed to show reversible error in either the suit in equity or the action at law, the result is that in the first case the decree of the single justice sustaining the demurrer and dismissing the bill should be affirmed, with costs of the appeal, and in the second case judgment is to be entered for the defendant.

Ordered accordingly.

EXPENSES OF OFFICE.

EXPENDITURES FOR YEAR ENDED NOVEMBER 30, 1917.

Commissioners' salaries,	\$40,500 00
Secretaries' salaries,	10,500 00
Accounting Department,	8,500 00
Engineering Department,	11,064 45
Inspection Department,	34,735 73
Rate and Tariff Department,	4,000 00
Telephone and Telegraph Department,	6,900 02
Clerical assistance and messenger services,	12,334 09
Experts,	1,308 00
Office supplies and contingent expenses,	9,341 38
Printing and binding annual report,	8,657 47
Rent of office,	13,500 00
Stenographic reports of hearings,	5,312 92
Total,	<hr/> \$166,654 06

INDEX.

INDEX.

- Abolition of grade crossings (*see Grade Crossings*).
- Accidents, railroad, investigation of, Boston, Revere Beach and Lynn, 385, 386.
New York, New Haven and Hartford, 386-390.
number investigated, xxvi.
statistics of, lv-lxi.
- Accidents, street railway, circular, 394.
investigation of, Boston Elevated, 390-394.
Worcester Consolidated, 394-398.
number investigated, xxvii.
statistics of, xxvii.
- Accommodations, fares, rates, service, reports and orders, railroad, 3-27, 154-192.
station (*see Stations*).
street railway, 28-153, 193-249.
telephone, 250-269.
- Acton, rates, Concord, Maynard and Hudson, 64-75.
- Additions to property, street railway (*see returns*).
telephone and telegraph (*see returns*).
- Agreements, filing of, circular, 448, 449.
- Alteration, of bridges (*see Bridges, Alteration of*).
of crossings (*see Crossings, Alteration of*).
- American Sugar Refining Company, private railroad, Boston, 343.
- American Telephone and Telegraph Company (*see returns*).
- Amherst, fares, Holyoke, 76-102.
- Annual returns, tabulated statements of income accounts, express, xciv, xcv.
sleeping car company, xcvi.
steamboat companies, xcvi.
street railway, lxxxiv-lxxxix.
telegraph, xcii, xciii.
telephone, xc, xci.
voluntary associations, xcvi.
- Applications to Commission, 1916-1917, vii.
- Approval of corporate name, Norton, Taunton and Attleboro, 443.
- Arlington, extension of time for crossing, Boston and Maine, by West End, 341.
switch connection, Boston Elevated-Bay State, Winchester to Cambridge
subway, 226-234.
- Arlington street station, in Boylston street subway, proposed, terms of contract,
427-429.
- Ashland, fares, Middlesex and Boston, 103-108.
service, Boston and Albany, 452-454.
- Assets, railroad, xxxix.
(*See also returns*).
street railway, lxiv.
(*See also returns*).
telephone and telegraph (*see returns*).
- Atlantic avenue elevated structure, use for railroad equipment, special report to
General Court, 456-460.

- Attleboro, alteration of crossing, New York, New Haven and Hartford, 353-355.
fares, Norton, Taunton and Attleboro, 129-133.
service, restoration of, New York, New Haven and Hartford, memorandum, 179-181.
Attleborough Branch railroad (see returns).
Automatic Telephone Company, service, free or reduced, for charitable purposes, 258-262.
Ayer, interlocking signal plant, 421.
- Ball signals (*see Signals*).
Bank commissioner of the commonwealth, communication to, concerning street railway dividends, 439.
Barber crossing, Worcester, changes in signals, Boston and Maine, 422.
Battery Junction, accident at, investigation of, Boston, Revere Beach and Lynn, 385, 386.
Bay State street railway, bonds, issue of, 284-290.
Beverly, reduced rate for workingmen's tickets, 37, 38.
bridge, Taunton and Dighton, repair, 274, 275.
capital stock, issue of, 284-295.
cars, one-man, approval of, 323-329.
crews, change of, Hyde Park-Boston line, Boston Elevated, 220-224.
crossing-tenders, discontinuance of, at certain crossings, 337, 338.
drawbridges, stop signs at, location, rule governing use, 278, 279.
emergency tool chests, discontinuance of, at certain points, 442, 443.
Fall River v. Public Service Commission and, court decision, 465-468.
 withdrawal of special tickets in city of, 28-37.
fares, 28-46.
free transportation, 193.
grade crossing, Chelmsford, with Boston and Maine, 336, 337.
joint use of tracks, Fore River Shipbuilding Corporation, Quincy, 399.
 Lowell and Fitchburg, Chelmsford, Lowell, 399, 400.
 Providence and Fall River, Fall River and Somerset, 400, 401.
notes, issue of, 291-295.
rates, 28-46.
service, Braintree, 197-210.
 Bridgewater, 211-213.
 Brockton, 197-210.
 Crow Point, 213-215.
 Dracut, 210, 211.
 East Bridgewater, 211-213.
 Gloucester, 197-210.
 Hingham, 213-215.
 Ipswich, 197-210, 215, 216.
 Ipswich Junction, 197-210, 215, 216.
 Lanesville, 197-210.
 Lowell, 197-210.
 Malden, 197-210.
 Melrose, 216-219.
 Newburyport, 197-210.
 Randolph, 219, 220.
 Reading, 197-210.
 Revere, 197-210.
 Rockland, 197-210.
 Rockport, 197-210.
 Rowley, 197-210.
 Woburn, 220.

- Bay State street railway, sprinkler cars, Lawrence, 445.
 Malden, 446.
 stop signs at drawbridges, rule governing use of, 278, 279.
 stopping-post, Medford, restoration of, 235.
 Randolph, 219, 220.
 switch connection, for through service, Bay State-Boston Elevated, Arlington, Winchester, 226-234.
 transfers, Groveland, 194-196.
- Beechmont Independent Telephone Company (see returns).
- Bennington street bridge, Boston and Albany, alteration of, 272, 273.
- Berkshire street railway (see returns).
- Bernardston and Gill Telephone Company (see returns).
- Beverly, crossing protection, Boston and Maine, 344, 345.
 fares, Bay State, 37-46.
 one-man cars, operation of, 323-329.
 rates, workingmen's tickets, reduced, 37, 38.
 telephone service, proposed discontinuance of obsolete six-party unlimited, New England Telephone and Telegraph, 254-258.
 transfers, Bay State, 39-46, 194-196.
- Billerica, fares, Bay State, 39-46.
 Middlesex and Boston, 103-108.
- Blue Hill street railway, car steps, extension of time for changing, 333.
- Boats, Sunday, 437.
- Bolton Telephone Company (see returns).
- Bonds, railroad, amount of, xli.
 Boston and Albany, 299, 300.
 Nantucket Railroad, 305-308.
- Bonds, street railway, amount of, lxvii.
 Bay State, 284-290.
 Boston Elevated, proceeds returned to, by Treasurer and Receiver-General, 297, 298.
 Boston and Worcester, 300-302.
 Fitchburg and Leominster, 303.
 Milford and Uxbridge, 450, 451.
 Milford, Holliston and Framingham, 451, 452.
 Norton, Taunton and Attleboro, 309, 310.
 Springfield, 311, 312.
 West End, 313-320.
 application of proceeds, 315, 316, 318, 319.
 interest on, increase in rate, 319, 320.
 Worcester Consolidated, 320, 321.
- Boston, accident, investigation of, Boston Elevated, 390-394.
 alteration of crossing, Broadway, Boston and Albany, 355, 356.
 South Boston, 356-371.
 Atlantic avenue elevated railway structure, use of, etc., report to the General Court, 456-460.
 bridges, Bennington street, alteration of, 272, 273.
 Brookline avenue, Boston and Albany, amended, 270-272.
 Walworth street, in West Roxbury district, New York, New Haven and Hartford, 274, 275.
 Charlestown, abolition of crossings, memorandum, 449.
 decelerating track, Charlestown bridge, 441.
 Dorchester tunnel, certificate of operation, 419, 420.
 drawbridges, speed of cars approaching, 275-278.
 East Boston, crossing of Boston and Maine, by Boston Development and Sanitary Company, 342.
 Egleston square, changes in station, approval of plan, 435.

- Boston, extension of time for crossing, New York, New Haven and Hartford, by West End, 341.
- grade crossings, abolition of, Charlestown, memorandum of Joint Board, 449.
- one-man car, operation of, between Maverick square and North Ferry, East Boston, 329-332.
- private railroads, American Sugar Refining Company, 343.
- Summer Street Extension Trust, 343.
- Woods, S. A., Machine Company, 343.
- service, Dorchester, 243, 244.
- Mattapan, 244-246.
- Pleasant street, investigation by Commission, 236-242.
- South Boston, 236-244.
- Sullivan square to Elm street, Medford, 234, 235.
- South Boston cut, alteration of crossings, 356-371.
- speed of cars approaching drawbridges, petition of City Council, 275-278.
- stations, Arlington street, proposed, terms of contract, 427-429.
- Egleston square, changes in, approval of plan, 435.
- stop signs at drawbridges, Boston Elevated, 280, 281.
- Boston and Albany railroad, alteration of crossing, Broadway, Boston, 355, 356.
- bonds, issue of, 299, 300.
- bridges, alteration of, Boston, 270-274.
- Everett street crossing, Wellesley, discontinuance of, 349-352.
- land taking, Chelsea, 402, 403.
- Springfield, 403-407.
- rates, lime, lime ashes and limestone, 154-160.
- reparation, Davis and Brock, 161, 162.
- Worcester Chamber of Commerce, 164, 165.
- service, Hopkinton and Ashland, 452-454.
- reduction in, investigation by Commission, 187-192.
- smoke nuisance, Pittsfield, 445.
- Sunday train, 438.
- Boston, Cape Cod and New York Canal Company (see returns).
- Boston and Chelsea street railway (see returns).
- Boston Development and Sanitary Company, private railroad, East Boston, 342.
- Boston Elevated railway, accident, North station, investigation of, 390-394.
- Atlantic avenue elevated railway structure, use of, etc., special report to General Court, 456-460.
- bonds, proceeds returned to company, 297, 298.
- capital stock, use of proceeds, 296, 297.
- car steps, extension of time for changing, 333.
- cars, approval of type, 329-333.
- one-man, 329-332.
- crews, change of, at Hyde Park-Boston line, Bay State, 220-224.
- decelerating device, approval of, 440, 441.
- Charlestown bridge, 441.
- East Cambridge viaduct, 441.
- dividends, communication to bank commissioner, 439.
- Dorchester tunnel, certificate preliminary to operation, 419, 420.
- drawbridges, stop signs at, 280.
- modification of order, 280, 281.
- East Cambridge viaduct, modification in track construction, approval of plan, 442.
- Egleston square station, certificate of operation, 436.
- changes in, approval of plan, 435.
- Everett, approval of plan, modified loop track construction, 435.
- extension of time for constructing Everett extension, so-called, 417.
- plans, location, form, construction, etc., 418.

- Boston Elevated railway, location of tracks, station and approaches, 430-435.
locking device for articulated cars, approval of, 442.
parcel checking cabinets, 436.
service, Boston, 225, 226.
 Cambridge, 226-234, 243, 244.
 Dorchester, 243, 244.
 Mattapan, 244-246.
 Medford, 234, 235.
 South Boston, 243, 244.
sprinkler cars, Malden, 446.
 Somerville, 446.
stations, Arlington street, proposed, terms of contract, 427-429.
 Egleston square, certificate of operation, 436.
 changes in, approval of plan, 435.
 Everett, approval of plan, modified loop track construction, 435.
 location of tracks, station and approaches, 430-435.
 track system, for renewals of existing structure and Everett extension, 418.
stop signs at drawbridges, 280.
 modification of order, 280, 281.
switch connection, for through service, Boston Elevated-Bay State, Arlington, Winchester, 226-234.
- Boston and Lowell, Manchester and Concord Express Company, authority to do express business on passenger trains of Boston and Maine, between Boston and Lowell, 380-382.
- Boston and Lowell railroad (see returns).
- Boston and Maine railroad, crossing, by Boston Development and Sanitary Company, 342.
 protection, Beverly, 344, 345.
 Malden, 345, 346.
 Wilmington, 337, 338.
 Winchester, 337, 338.
 Woburn, 347, 348.
- express transportation on passenger trains, petition of A. G. Pollard Company, 380-382.
- extension of time for crossings, by West End, Arlington, Somerville, 341.
- grade crossing, Chelmsford, with Bay State, 336, 337.
 Worcester, with Worcester Consolidated, 339, 340.
- National Dock and Storage Warehouse Company, *v.*, court decision, 461-465.
- rates, for milk, cheese and cream, 1-27.
- service, Concord, restoration of, 167, 168.
 Danvers, Topsfield, Boxford, Georgetown, 168, 169.
 Dunstable, 169, 170.
 reduction in, investigation by Commission, 187-192.
 West Acton milk car, discontinuance of, 166, 167.
- signals, ball, extension of time for replacing, 421, 422.
 changes in, East Somerville, 422.
 Worcester, Barber crossing, 422.
 interlocking, installation of, Ayer, 421.
 Peabody, 421.
- station, Malden, subway at, 426, 427.
- Sunday trains, 438.
 weighing charges, petition of Sprague, Breed and Brown Company, 162-164.
- Boston, Nahant and Pines Steamboat Company, Sunday boats, 437.
- Boston and Providence railroad, land taking, Mansfield, 407-409.
 Sharon, 409-411.
- Boston and Revere Electric street railway, dividends, communication to bank commissioner, 439.

- Boston, Revere Beach and Lynn railroad, accident at Battery Junction, investigation of, 385, 386.
- Boston Suburban Electric Companies (see returns).
- Boston and Worcester Electric Companies (see returns).
- Boston and Worcester street railway, bonds, issue of, 300-302.
 capital stock, issue of, 300-302.
 crossing protection, Framingham, gateman, 340.
 extension of time for crossings, New York, New Haven and Hartford, Framingham, 341.
 fares, rate case, 47-63.
- Boston and Yarmouth Steamship Company, Ltd., Sunday boats, 437.
- Bourne, fares, New Bedford and Onset, 125-128.
 stop signs at Canal drawbridge, New Bedford and Onset, 282, 283.
- Boxford, service, Boston and Maine, 168, 169.
- Braintree, service, Bay State, 197-210.
 signals, changes in, New York, New Haven and Hartford, 422, 423.
- Bridge and signal department, report for year, xxviii.
- Bridges, railroad, alteration of, Boston and Albany, Bennington street, 272, 273.
 Brookline avenue, amendment of previous order, 270-272.
 statistics of, xxxi.
- Bridges, street railway, Lake Quinsigamond, temporary, 275.
 Taunton and Dighton, repair of, 274.
- Bridgewater, fares, Bay State, 39-46.
 service, Bay State, 211-213.
- Bristol County street railway, receivers of, car steps, extension of time for changing, 333.
- Brockton, fares, Bay State, 39-46.
 service, Bay State, 197-210.
- Brockton and Plymouth street railway, car steps, extension of time for changing, 333.
 cars, one-man, approval of, 329-332.
- Brookfield, fares, Ware and Brookfield, 144-148.
 Worcester and Warren, 149-153.
- Brookline avenue bridge, Boston and Albany, alteration of, 270-272.
- Burke, John J., *et al.*, telephone rates in potential exchanges, New England Telephone and Telegraph, 263-269.
- Cambridge, private railroads, Mary T. Carney and Edmund Reardon, 343.
 Worthington Pump and Machinery Company, 343.
 Cottage Farm bridge line, 243, 244.
 through, Winchester to Harvard square, 226-234.
- Canton, fares, Norwood, Canton and Sharon, 134-143.
- Canton Street Associates, stopping-post, Randolph, Bay State, dismissed, 219, 220.
- Cape Cod Steamship Company, Sunday boats, 437.
- Cape Cod Telephone Company (see returns).
- Capital stock, railroad, Nantucket, reduction of, 305-308.
- Capital stock, street railway, issues of, Bay State, 284-290.
 Boston Elevated, use of proceeds, 296, 297.
 Boston and Worcester, 300-302.
 Norton, Taunton and Attleboro, 309.
 Swansea and Seekonk, 312, 313.
 West End, 315, 316.
 application of proceeds, 318, 319.
 Worcester Consolidated, 321, 322.
- Capital stock, telephone and telegraph, Elizabeth Islands Telephone, 302, 303.
 Highland Telephone, 304, 305.
- Car, crews, change of, at Hyde Park-Boston line, Bay State, Boston Elevated, 220-224.

- Car, heating, circulars, modification of regulations, 334, 335.
 - exemption from, New York, New Haven and Hartford, 334.
 - loading, circular relative to, 447, 448.
 - steps, extension of time for changing, Blue Hill, 333.
 - Boston Elevated, 333.
 - Bristol county, 333.
 - Brockton and Plymouth, 333.
 - Interstate Consolidated, 333.
- Car sprinkling (*see Sprinkler Cars*).
- Carney, Mary T., private railroad, Cambridge, 343.
- Cars, railroad, number of, liv.
 - repairs, cost of, xlix.
- Cars, street railway, type, approval of, 323-333.
 - number of, lxxxi.
- Central New England railway (*see returns*).
- Central Vermont railway (*see returns*).
 - (*See also New London Northern.*)
- Charlestown (*see Boston*).
- Charter certificate, Elizabeth Islands Telephone, memorandum, 447.
 - Swansea and Seekonk, 446, 447.
- Chatham railroad (*see returns*).
- Chelmsford, fares, Bay State, 39-46.
 - grade crossing, Boston and Maine, with Bay State, 336, 337.
 - joint use of tracks, Bay State and Lowell and Fitchburg, 399, 400.
- Chelmsford Telephone Company (*see returns*).
- Chelsea, fares, Bay State, 39-46.
 - land taking, Boston and Albany, 402, 403.
- Chester and Becket railroad (*see returns*).
- Chicopee, fares, Holyoke, 76-102.
- Circulars, accidents on street railways, 394.
 - car loading, 447, 448.
 - heating street railway cars, modification of regulations, 334, 335.
 - inquests, 444.
 - locomotive boilers, inspecting and testing of, 440.
 - operating contracts, filing of, 448, 449.
- City Iron Foundry Company, private railroad, Lowell, 454, 455.
- Columbia and Rensselaer Telephone and Telegraph Company (*see returns*).
- Commercial Cable Company (*see returns*).
- Common carriers, street railway (*see Express Transportation*).
- Concord, rates, Concord, Maynard and Hudson, 64-75.
 - service, restoration of, Boston and Maine, 167, 168.
- Concord, Maynard and Hudson street railway, fares, 64-75.
 - one-man car, approval, 333.
- Connecticut River railroad (*see returns*).
 - (*See also Boston and Maine.*)
- Connecticut Valley street railway (*see returns*).
- Construction, railroad, new mileage, xxxvii.
 - (*See also returns.*)
 - street railway, cost of, lxiv.
 - per mile of main track, lxx.
 - new mileage, lxviii.
 - telephone and telegraph (*see returns*).
- Contracts and agreements, filing of, circular, 448, 449.
- Corporate name, Norton, Taunton and Attleboro, approval of, 443.
- Cottage Farm bridge line, Boston Elevated, 243, 244.
- Court cases, discussion, xix-xxi.
- Court decisions, Fall River v. Public Service Commission and Bay State, 465.

- Court decisions, National Dock and Storage Warehouse Company *v.* Boston and Maine, 461-465.
- Crescent Telephone Company (see returns).
- Crossing bells, protection by (*see Grade Crossings, Safeguards at*).
- Crossing protection (*see Grade Crossings, Safeguards at*).
- Crossings, alteration of, Boston and Albany, Boston, 355, 356.
New York, New Haven and Hartford, Attleboro, 353-355.
Boston, in South Boston district, 356-371.
Raynham, 372, 373.
(*See also Bridges, Grade Crossings.*)
- Crow Point, service, Bay State, 213-215.
- Damages, street railway (see returns).
- Danvers, investigation of proposed discontinuance of "obsolete" six-party service,
New England Telephone and Telegraph, 254-258.
one-man cars, operation of, 323-329.
service, Boston and Maine, 168, 169.
- Davenport's Express Company, authority to transact express business on passenger
trains, New York, New Haven and Hartford, 378-380.
- Davis and Brock, reparation, Boston and Albany, 161, 162.
- Decelerating device, approval of, 440, 441.
- Deceleration of elevated trains and cars, Boston Elevated, device, track, 440, 441.
Charlestown bridge, 441.
East Cambridge viaduct, 441.
- Dedham, one-man cars, operation of, 323-329.
- Department reports, bridge and signal, xx.
engineering, xxvii.
inspection, xxiv.
rate and tariff, xxii.
telephone and telegraph, xxxiii.
- Devices, decelerating, 440, 441.
locking, 442.
- Dighton, bridge, street railway, repair of, 274.
fares, Bay State, 39-46.
- Discontinuance, emergency tool chests, Bay State, 442, 443.
Everett street crossing, Wellesley, 349-352.
- Dividends, express, amount declared by each company, xciv.
railroad, amount declared by each company, xl.
percentage of, to capital stock, xii.
street railway, amount declared by each company, lxxv, lxxvi.
communication to bank commissioner, 439.
percentage of, to capital stock, lxxvii.
telegraph, amount declared by each company, xciii.
telephone, amount declared by each company, xci.
voluntary associations, amount declared by each company, xevi.
(*See also returns.*)
- Dorchester (*see Boston*).
- Dorchester station, accident near, New York, New Haven and Hartford, 386-390.
- Dorchester tunnel, certificate preliminary to operation, 419, 420.
- Dracut, service, Bay State, 210, 211.
- Drawbridges, speed of street railway cars approaching, Boston, 275-278.
stop signs at, Bay State, 278, 279.
Boston Elevated, 280, 281.
Massachusetts Northeastern, 281, 282.
New Bedford and Onset, 282, 283.
Union, 283.
- Dunstable, service, Boston and Maine, 169, 170.

- Earnings (*see Operation*).
- East Boston (*see Boston*).
- East Bridgewater, crossing protection, New York, New Haven and Hartford, 337, 338.
service, Bay State, 211-213.
- East Brookfield, fares, Worcester and Warren, 149-153.
- East Cambridge viaduct, decelerating device, track, 441.
modification of track construction upon, approval of plans, 442.
- East Middlesex street railway, dividends, communication to bank commissioner, 439.
- East Milton, one-man cars, operation of, 323-329.
- East Taunton street railway, dividends, communication to bank commissioner, 439.
- East Weymouth, one-man cars, operation of, 323-329.
- Eastern Steamship Lines, Inc., Sunday boats, 437.
- Egleston square station, Boston, certificate of operation, 436.
changes in, approval of plan, 435.
- Elizabeth Islands Telephone Company, capital stock, issue of, 302, 303.
certificate of organization, 447.
- Emergency tools and appliances, discontinuance of, at certain points on Bay State, 442, 443.
investigation by Commission, 383-385.
- Employees, railroad, accidents to, lviii, lix.
number of, liv, lv.
(See also returns.)
- Employees, street railway, accidents to, lxxxi.
number of, lxxxi.
(See also returns.)
- Employees, telephone and telegraph, number of (*see returns*).
- Engineering department, report for year, xxvii-xxxiii.
- Engines (*see Locomotives*).
- Equipment, railroad, inspection of, xxv, xxvi.
number of cars, locomotives, liv.
(See also tabulation of returns.)
- Equipment, street railway, cost of, lxviii-lxx.
gross assets in, lxiv.
number of electric motors, cars and other vehicles, lxxxi.
(See also returns.)
- Equipment, telephone and telegraph (*see returns*).
- Esleek Paper Company, freight service, Turners Falls branch, New York, New Haven and Hartford, 171-173.
- Essex, fares, Bay State, 39-46.
- Everett, location of tracks, station and approaches, Boston Elevated, 430-435.
loop track construction, modified, approval of plan, 435.
- Everett extension, extension of time for construction, 417.
form and method of construction, approval, 418.
- Expenses, of office, 469.
of operation (*see Operation*).
- Express, street railway, Webster and Dudley, Webster, 374-377.
Worcester and Webster, Webster, 374-377.
Worcester Consolidated, Webster, 374-377.
- Express cars, railroad, number of, liv.
revenue, railroad, xliii.
street railway, lxxi.
- Express transportation, Davenport's Express, express business on passenger trains, New York, New Haven and Hartford, 378-380.
Gale's Plymouth and Boston Express, express business on passenger trains, New York, New Haven and Hartford, 378-380.

- Express transportation**, Pollard, A. G., Company, petition that Boston and Lowell, Manchester and Concord Express be authorized to do express business, Boston and Maine, between Boston and Lowell, 380-382.
- Extensions, railroad** (*see Construction, Locations, Operation*).
street railway (*see Construction, Locations, Operation*).
- Fall River, fares, Bay State, 28-37, 39-46.**
 v. Public Service Commission and Bay State, court decision, 465-468.
 discussion, xx.
 joint use of tracks, Bay State and Providence and Fall River, 400, 401.
 tickets, withdrawal of, in city of, by Bay State street railway, 28-37.
- Fares, street railway, Bay State, 28-46.**
 Boston and Worcester, 47-63.
 Concord, Maynard and Hudson, 64-75.
 Holyoke, 76-102.
 Middlesex and Boston, 103-108.
 Milford and Uxbridge, 109-124.
 New Bedford and Onset, 125-128.
 Norton, Taunton and Attleboro, 129-133.
 Norwood, Canton and Sharon, 134-143.
 Union, New Bedford and Fall River, 193.
 Ware and Brookfield, 144-148.
 Worcester and Warren, 149-153.
- Farmers Mutual Telephone Company of Bristol County** (*see returns*).
- Fellsway Home Improvement Association, service, Boston Elevated, 234, 235.**
- Fitchburg, service, Northern Massachusetts, 248, 249.**
 sprinkler cars, Fitchburg and Leominster, 446.
 Northern Massachusetts, 446.
- Fitchburg and Leominster street railway, bonds, issue of, 303.**
 dividends, communication to bank commissioner, 439.
 sprinkler cars, Fitchburg, 446.
- Fitchburg railroad** (*see returns*).
- Fore River Shipbuilding Corporation, joint use of tracks with Bay State, Quincy, 399.**
- Framingham, crossing protection, change in method of, 340.**
 extension of time for crossing, New York, New Haven and Hartford, by Boston and Worcester, 341.
- fares, Boston and Worcester, 47-63.**
 Middlesex and Boston, 103-108.
 Milford and Uxbridge, 109-124.
- Free transportation, Bay State, 193.**
- Funded debt, railroad** (*see returns*).
 street railway (*see returns*).
 telephone and telegraph (*see returns*).
 (*See also Bonds.*)
- Gale's Plymouth and Boston Express, express business on passenger trains, New York, New Haven and Hartford, 378-380.**
- Gardner, service, Northern Massachusetts, 248, 249.**
- General Court** (*see Legislature*).
- General rate case, discussion, xi.**
- Georgetown, fares, Bay State, 39-46.**
 service, Boston and Maine, 168, 169.
- Gilbertville (Hardwick), fares, Ware and Brookfield, 144-148.**
- Gloucester, fares, Bay State, 39-46.**
 service, Bay State, 197-210.
 telephone rates in "potential" exchanges, John J. Burke and others, 263-269.

- Gloucester Steamship Company (see returns).
 Grade crossings (*abolition of*), Boston, Charlestown district, Joint Board memorandum, 449.
 Greenfield, Silver street and Connecticut River railroad, 348.
 Wellesley, Everett street and Boston and Albany railroad, 349-352.
 Grade crossings (*permitted*), Chelmsford, Boston and Maine, by Bay State, 336, 337.
 Worcester, Boston and Maine, by Worcester Consolidated, 339, 340.
 Grade crossings (*safeguards at*), Bay State, special crossing tenders, petition for discontinuance of, 337, 338.
 Boston and Maine, Beverly, annunciator bell, 344, 345.
 Malden, electrically operated signal or warning bells, 345, 346.
 Woburn, alarm bells, 347, 348.
 Boston and Worcester, Framingham, gates and gatemen, 340.
 New York, New Haven and Hartford, Sudbury, gates and flagman, 346.
 Grade crossings (*time extended*), Boston and Worcester, Framingham, 341.
 West End, Arlington, Boston, Somerville, Watertown, 341.
 Grafton and Upton railroad (see returns).
 Granby, fares, Holyoke, 76-102.
 Granby Telephone and Telegraph Company (see returns).
 Great Barrington, service, New York, New Haven and Hartford, 181-185.
 Greenbush, signals, changes in, New York, New Haven and Hartford, 422, 423.
 Greenfield, abolition of grade crossing, Silver street and Connecticut River railroad, 348.
 Groveland, transfer limits, Bay State, 194-196.

 Hampden railroad (see returns).
 Hartford and Connecticut Western railroad (see returns).
 Haverhill, fares, Bay State, 39-46.
 one-man cars, operation of, 323-329.
 Heath Local Telephone Association (see returns).
 Heath Telephone Company (see returns).
 Heating cars by steam, exemption from, New York, New Haven and Hartford, 334.
 Highland Telephone Company, capital stock, 304, 305.
 Hingham, fares, Bay State, 39-46.
 service, Bay State, 213-215.
 Holbrook, fares, Bay State, 39-46.
 Holliston, fares, Milford and Uxbridge, 109-124.
 Holyoke, fares, 76-102.
 Holyoke street railway, dividends, communication to bank commissioner, 439.
 fares, rate case, 76-102.
 Holyoke and Westfield railroad (see returns).
 Hoosac Tunnel and Wilmington railroad (see returns).
 Hopkinton, fares, Middlesex and Boston, 103-108.
 Milford and Uxbridge, 109-124.
 service, Boston and Albany, 452-454.
 Horn Pond Branch railroad (see returns).
 Howe Lumber Company, private railroad, Marlborough, 343.
 Hudson, fares, Boston and Worcester, 47-63.
 Concord, Maynard and Hudson, 64-75.
 Hyde Park, fares, Bay State, 39-46.
 one-man cars, operation of, 323-329.

 Injuries to persons from accidents (*see Accidents*).
 Inquests, circular relative to, 444.
 Inspection of bridges, xxviii.
 Inspection department, report, xxiv.
 Inspection and testing of locomotive boilers, circular, 440.

- Interest on funded and other debts (see returns).
- Interlocking signals (*see Signals*).
- Interstate Consolidated street railway, car steps, extension of time for changing, 333.
- Investigation of accidents (*see Accidents*).
- Investigations, Atlantic avenue elevated structure, use of, report to General Court, 455-459.
 emergency tools and appliances, 383-385.
 railroad service, Boston and Albany, Boston and Maine, New York, New Haven and Hartford, 187-192.
 street railway service, Pleasant street, Boston, 236-242.
 telephone service, extension of, 250-254.
 six-party unlimited, Salem, Beverly, Danvers, Peabody, Marblehead, 254-258.
- Investments, street railway, per mile of main track, lxviii-lxx.
- Ipswich, service, Bay State, 197-210, 215, 216.
- Ipswich Junction, service, Bay State, 197-210, 215, 216.
- Joint Board, with commission on Waterways and Public Lands, abolition of grade crossings in Charlestown district, Boston, 449.
- Joint use of tracks, Chelmsford, Bay State and Lowell and Fitchburg, 399, 400.
 Fall River, Bay State and Providence and Fall River, 400, 401.
 Lowell, Bay State and Lowell and Fitchburg, 399, 400.
 Milford, Milford and Uxbridge and Worcester Consolidated, 400.
 Quincy, Bay State, Fore River Shipbuilding Corporation, 399.
 Somerset, Bay State and Providence and Fall River, 400, 401.
 Uxbridge, Milford and Uxbridge and Worcester Consolidated, 400.
- Kenney, Thomas J., stopping-post, Randolph, Bay State, petition dismissed, 219, 220.
- Lake Quinsigamond, temporary bridge at, 275.
- Lakeville, fares, Bay State, 39-46.
- Land takings, Boston and Albany, Chelsea, 402, 403.
 Springfield, 403-407.
 Boston and Providence, Mansfield, 407-409.
 Sharon, 409-411.
 New York, New Haven and Hartford, South Boston, 411, 412.
 Springfield, 413-415.
 revocation of previous order, 413.
 Old Colony, Plymouth, 415, 416.
- Lanesville, service, Bay State, 197-210.
- Lawrence, fares, Bay State, 39-46.
 sprinkler cars, Bay State, 445.
- Leased lines, railroad (see returns).
 street railway (see returns).
- Legislature, special report to, Atlantic avenue elevated railway structure, Boston, use of, for transfer of railroad equipment, 456-460.
- Leicester, accident, Worcester Consolidated, 394-398.
- Lexington, fares, Middlesex and Boston, 103-108.
 service, Middlesex and Boston and Boston Elevated, 225, 226.
- Lime, rates on, Boston and Albany, 154-160.
- Linwood street railway (see returns).
- Liquor, delivery of freight shipments into no-license towns, New York, New Haven and Hartford, 174-179.
- Littleton Telephone Association (see returns).

- Locations, railroad, land takings, Boston and Albany, Chelsea, 402, 403.
 - Springfield, 403-407.
 - Boston and Providence, Mansfield, 407-409.
 - Sharon, 409-411.
 - New York, New Haven and Hartford, South Boston, 411, 412.
 - Springfield, 413-415.
 - revocation of previous order, 413.
 - Old Colony, Plymouth, 415, 416.
- Locations, street railway, 417, 418.
- Locking device, approval of, 442.
- Locomotive boilers, inspecting and testing of, circular, 440.
- Locomotives, number inspected, xxv.
 - number owned, liv.
 - smoke from, 445.
- Lowell, express transportation on passenger trains, Boston and Maine, 380-382.
 - fares, Bay State, 39-46.
 - joint use of tracks, Bay State and Lowell and Fitchburg, 399, 400.
 - private railroad, City Iron Foundry Company, 454, 455.
 - service, Bay State, 197-210.
- Lowell and Andover railroad (see returns).
- Lowell and Fitchburg street railway, joint use of tracks, Bay State, Chelmsford and Lowell, 399, 400.
- Lynn, fares, Bay State, 39-46.
- Mahoney, Representative W. H., service, Boston and Maine, Danvers, 168, 169.
- Malden, crossing protection, Boston and Maine, 345, 346.
 - service, Bay State, 197-210.
 - sprinkler cars, Bay State, 446.
 - Boston Elevated, 446.
 - subway, Western division station, 426, 427.
- Mann, T. J., telephone service, restored, 262, 263.
- Mansfield, fares, Norton, Taunton and Attleboro, 129-133.
 - land taking, Boston and Providence, 407-409.
 - service, New York, New Haven and Hartford, restoration of, 179-181.
- Marblehead, fares, Bay State, 39-46.
 - investigation of proposed discontinuance of "obsolete" six-party unlimited service, New England Telephone and Telegraph, 254-258.
- Marion, fares, New Bedford and Onset, 125-128.
- Marlborough, fares, Boston and Worcester, 47-63.
 - private railroad, Howe Lumber Company, 343.
- Martha's Vineyard street railway (see returns).
- Martha's Vineyard Telegraph Company (see returns).
- Martin, Robert B., change of crews, Boston Elevated and Bay State companies at Hyde Park-Boston line, 220-224.
- Massachusetts Consolidated railways (see returns).
- Massachusetts Electric Companies (see returns).
- Massachusetts legislature (see *Legislature*).
- Massachusetts milk rates, 1-27.
- Massachusetts Northeastern street railway, stop signs at drawbridges, approval of type, 281, 282.
- Massachusetts Telephone and Telegraph Company (see returns).
- Mattapan Civic Improvement Association, service, Boston Elevated, 244-246.
- Mattapan, one-man cars, operation of, 323-329.
 - service, Boston Elevated, 244-246.
- Maynard, rates, Concord, Maynard and Hudson, 64-75.

- Medford, service, Sullivan square to Elm street, Boston Elevated, 234, 235.
 stopping-post, restoration of, Bay State, 235.
- Medway, fares, Milford and Uxbridge, 109-124.
- Medway and Dedham street railway (see returns).
- Melrose, service, Bay State, 216-219.
- Merchants and Miners Transportation Company, Sunday boats, 437.
- Middleborough, fares, Bay State, 39-46.
 New Bedford and Onset, 125-128.
- Middlesex and Boston street railway, fares, 103-108.
 service, 225, 226.
- Middleton, fares, Bay State, 39-46.
- Mileage, railroad, owned and operated, xxxvii, xxxviii.
 passenger, freight and train, xlix-lii.
- Mileage, street railway, car, lxxvii.
 new, lxii.
 owned and operated, lxii, lxiii.
 (See also returns.)
- Milford, fares, Milford and Uxbridge, 109-124.
 joint use of tracks, Milford and Uxbridge and Worcester Consolidated, 400.
- Milford, Attleborough and Woonsocket street railway (see returns).
- Milford, Holliston and Framingham, bonds, extension of term, 451, 452.
- Milford and Uxbridge street railway, bonds, 450, 451.
 dividends, communication to bank commissioner, 439.
 fares, rate case, 109-124.
 joint use of tracks, Worcester Consolidated, Milford, Uxbridge, 400.
- Milk rates, Massachusetts, 1-27.
- Milk transportation, discussion, xii.
- Millers Falls Telephone Company (see returns).
- Milton, fares, Bay State, 39-46.
 one-man cars, operation of, 323-329.
- Miscellaneous orders and reports, 439-455.
- Morse, Representative George D., service, Boston and Maine, Danvers, 168, 169.
- Mount Tom railroad (see returns).
- Nahant and Lynn street railway (see returns).
- Nantasket Beach Steamboat Company, Sunday boats, 437.
- Nantucket Railroad Company, bonds, issue of, 305-308.
 capital stock, reduction of, 305-308.
- Nashua and Acton railroad (see returns).
- Nashua and Lowell railroad (see returns).
- Natick, fares, Boston and Worcester, 47-63.
 Middlesex and Boston, 103-108.
- National Dock and Storage Warehouse Company *v.* Boston and Maine, court decision, 461-465.
 discussion, xix.
- Needham, fares, Middlesex and Boston, 103-108.
- New Bedford, fares, New Bedford and Onset, 125-128.
 private railroad, New Bedford Gas and Edison Light Company, 344.
 Welsh, William G., 344.
 sprinkler cars, Union, 446.
 stop signs at drawbridges, New Bedford and Fairhaven bridge, Union, 283.
- New Bedford Gas and Edison Light Company, private railroad, New Bedford, 344.
- New Bedford and Onset street railway, fares, 125-128.
 service, between Onset Junction and Onset, modification of previous order, 246-248.
 stop signs at Canal drawbridge, Bourne, 282, 283.

- New Braintree, fares, Ware and Brookfield, 144-148.
- Newburyport, fares, Bay State, 39-46.
service, Bay State, 197-210.
- New England Investment and Security Company (see returns).
- New England Telegraph Company (see returns).
- New England Telephone and Telegraph Company, rates in potential exchanges, 263-269.
service, extension of, investigation, 250-254.
free or reduced rate, for charitable purposes, 258-262.
restoration of, to T. J. Mann, 262, 263.
six-party unlimited, Salem, Beverly, Danvers, Peabody, Marblehead, investigation of, 254-258.
- New Hampshire Electric Railways (see returns).
- New Haven legislation, discussion, xiii.
- New London Northern railroad (see returns).
- New street railway company, Swansea and Seekonk, 446, 447.
- Newton, fares, Middlesex and Boston, 103-108.
- Newtonville and Watertown street railway (see returns).
- New York Central railroad (*see Boston and Albany*).
- New York, New Haven and Hartford railroad, accident near Dorchester station, investigation of, 386-390.
alteration of crossing, Attleboro, 353-355.
Boston, South Boston district, 356-371.
Raynham, 372, 373.
bridges, alteration of, Boston, 274.
car heating, exemption from, 334.
crossing protection, East Bridgewater, 337, 338.
Sudbury, 346.
express transportation in passenger trains of, by Davenport's Express and Gale's Plymouth and Boston Express, 378-380.
extension of time for crossings, by Boston and Worcester, Framingham, 341.
West End, Boston, 341.
land takings, South Boston, 411, 412.
Springfield, 413-415.
revocation of previous order, 413.
legislation, discussion, xiii.
liquor, delivery of freight shipments of, into no-license towns, petition of Howard Noble, 174-179.
rates, milk, cheese and cream, 1-27.
minimum, for special train, 161.
service, Attleboro, Mansfield, West Mansfield, 179-181.
Great Barrington and Pittsfield, 181-185.
reduction in, investigation by Commission, 187-192.
Turners Falls branch, petition of Esleeck Paper Company, 171-173.
signals, approval of changes, 422, 423.
smoke nuisance, Pittsfield, 445.
Sunday trains, 438.
- Noble, Howard, Secretary of Brewers' Association, delivery of freight shipments into no-license towns, New York, New Haven and Hartford, 174-179.
- Norfolk and Bristol street railway (see returns).
- Northampton, service, New York, New Haven and Hartford, 185, 186.
- Northampton street railway (see returns).
- North Andover, private railroad, M. T. Stevens and Sons Company, 344.
- North Brookfield, fares, Worcester and Warren, 149-153.
- North Brookfield railroad (see returns).
- North End street railway (see returns).

- Northern Massachusetts street railway, service, discontinuance of, Westminster, 248, 249.
 sprinkler cars, Fitchburg, 446.
- Northfield Farms Telephone Company (see returns).
- North Orange Telephone Company (see returns).
- North Reading, one-man cars, operation of, 323-329.
- North Station, accident in front of, Boston Elevated, 390-394.
- Norton, fares, Norton, Taunton and Attleboro, 129-133.
- Norton and Taunton street railway, corporate name, change, 443.
- Norton, Taunton and Attleboro street railway, approval of corporate name, 443.
 bonds, issue of, 309, 310.
 capital stock, issue of, 309.
 fares, 129-133.
- Norton, Taunton and Attleborough street railway (see *Norton, Taunton and Attleboro street railway*).
- Norwich and Worcester railroad (see returns).
- Norwood, fares, Bay State, 39-46.
 Norwood, Canton and Sharon, 134-143.
- Norwood, Canton and Sharon street railway, fares, rate case, 134-143.
 time extended for effective date of new rates, 143.
- Notes, issue of, Bay State, 291-295.
- Notice to freight shippers of Massachusetts, 447, 448.
- Oak Bluffs street railway (see returns).
- Oakdale, one-man cars, operation of, 323-329.
- Oakham and Coldbrook Springs Telephone Company (see returns).
- Old Colony railroad, land taking, Plymouth, 415, 416.
- One-man cars, approval of, Bay State, 323-329.
 Boston Elevated, 329-332.
 Brockton and Plymouth, 329-332.
 Concord, Maynard and Hudson, 333.
 Worcester and Warren, 333.
- Onset, fares, New Bedford and Onset, 125-128.
 service, New Bedford and Onset, 246-248.
- Onset Junction, service, New Bedford and Onset, 246-248.
- Operating contracts, filing of, circular, 448, 449.
- Operation, railroad, expenses and revenues of, xliii.
 per freight-train mile, xlvii.
 per mile of road operated, xlvii.
 per passenger-train mile, xlvii.
 per total revenue-train mile, xlvii.
 ratio of expenses to revenues, xlv, xlviii.
 total revenue from operation for ten years, 1908-1916, xlv.
 (See also tabulated returns.)
- Operation, street railway, lxiii.
 car miles per car hour, lxxix.
 certificates preliminary to, 419, 420.
 earnings and expenses of, lxxi.
 per car mile, lxxiv.
 per mile of main track, lxxvi.
 per passenger, lxxviii.
 ratio of operating expenses, to gross earnings, 1908-1916, lxxii.
 to operating revenues, lxxii.
 (See also returns.)
- joint use of tracks (see *Joint Use of Tracks*).
- passengers carried per passenger car hour, lxxix.
- passengers carried per passenger car mile, lxxix.
 (See also *Service, Stations, Speed*.)

Operation, telephone and telegraph, earnings and expenses of (see returns).
O'Sullivan, Mary K., restoration of stopping-post, Medford, 235.

Palmer Lime and Cement Company, rates on lime, lime ashes and limestone, Boston and Albany, 154-160.

Parcel-checking cabinets, location, Boston Elevated, elevated and subway stations, 436.

Partridge, E. M., Millers Falls Telephone Company (see returns).

Peabody, fares, Bay State, 39-46.

investigation of proposed discontinuance of "obsolete" six-party unlimited service, New England Telephone and Telegraph Company, 254-258.

signals, ball, Boston and Maine, extension of time for operation of, 421, 422.

interlocking, Boston and Maine, installation of, 421.

Pelham, fares, Holyoke, 76-102.

Petitions to Commission, 1916-1917, vii.

Pittsfield, service, New York, New Haven and Hartford, 181-185.

smoke nuisance, Boston and Albany, New York, New Haven and Hartford, 445.

Pittsfield and North Adams railroad (see returns).

Pleasant street, Boston, service in, investigation by Commission, 236-242.

Plymouth, land taking, Old Colony, 415, 416.

Plymouth and Sandwich street railway (see returns).

Point Shirley street railway (see returns).

Pollard, A. G., Company, express business on passenger trains, Boston and Maine, between Boston and Lowell, 380-382.

Postal Telegraph-Cable Company of Massachusetts (see returns).

Private railroads, crossings of other railroad, Boston Development and Sanitary Company, Boston and Maine, East Boston, 342.

crossings of highways by, Boston, American Sugar Refining Company, 343.

Summer Street Extension Trust, 343.

Woods, S. A., Machine Company, 343.

Cambridge, Mary T. Carney and Edmund Reardon, 343.

Worthington Pump and Machinery Company, 343.

Lowell, City Iron Foundry Company, 454, 455.

Marlborough, Howe Lumber Company, 343.

New Bedford, New Bedford Gas and Edison Light Company, 344.

Welsh, William G., 344.

North Andover, M. T. Stevens and Sons Company, 344.

Providence and Fall River street railway, joint use of tracks, Bay State, Fall River and Somerset, 400, 401.

Providence Telephone Company of Massachusetts (see returns).

Providence, Webster and Springfield railroad (see returns).

Providence and Worcester railroad (see returns).

Public Service Commission, and Bay State, City of Fall River v., court decision, 465-468.

volume of work of, vii.

Quincy, fares, Bay State, 39-46.

joint use of tracks, Bay State, Fore River Shipbuilding Corporation, 399.

one-man cars, operation of, 323-329.

Railroad accidents (*see Accidents*).

bonds (*see Bonds*).

bridges (*see Bridges*).

cars (*see Cars*).

construction (*see Construction*).

corporations (*see Corporations*).

crossings (*see Crossings, Grade Crossings*).

- Railroad dividends (*see Dividends*).
employees (*see Employees*).
equipment (*see Equipment*).
expenses (*see Expenses, Operation*).
express (*see Express Service*).
extensions (*see Extensions*).
fares (*see Fares*).
grade crossings (*see Grade Crossings*).
inspection (*see Inspection*).
locations (*see Locations*).
mileage (*see Mileage*).
rates (*see Rates*).
repairs (*see Repairs*).
returns (*see Annual Returns*).
revenue (*see Revenue, Operation*).
rolling stock (*see Rolling Stock*).
service (*see Service*).
stations (*see Stations*).
statistics (*see Statistics*).
stock (*see Capital Stock*).
traffic (*see Traffic*).
- Randolph, fares, Bay State, 39-46.
one-man cars, operation of, 323-329.
stopping-post, Bay State, 219, 220.
- Rate case, general discussion, xi.
- Rates, Automatic Telephone, free or reduced, for charitable purposes, 258-262.
Bay State, 28-46.
Boston and Albany, lime, lime ashes and limestone, 154-160.
Boston and Maine, milk, cheese and cream, 1-27.
Boston and Worcester, 47-63.
Concord, Maynard and Hudson, 64-75.
effective on less than statutory notice (*see reports in rate cases*).
freight, average, on all Massachusetts roads, 1887-1916, liii.
on three roads, 1900, 1908, 1913-1916, liv.
Holyoke, 76-102.
Middlesex and Boston, 103-108.
Milford and Uxbridge, 109-124.
New Bedford and Onset, 125-128.
New England Telephone and Telegraph, free or reduced, for charitable purposes, 258-262.
for potential exchanges, 263-269.
New York, New Haven and Hartford, milk, cheese and cream, 1-27.
minimum, for special train, 161.
Norton, Taunton and Attleboro, 129-133.
Norwood, Canton and Sharon, time extended for effective date of, 134-143.
railroad, 1-27, 154-165.
street railway (*see Fares*).
tariffs (*see Tariffs*).
telephone, 258-262.
Ware and Brookfield, 144-148.
Worcester and Warren, 149-153.
- Raynham, alteration of crossing, New York, New Haven and Hartford, 372, 373.
fares, Bay State, 39-46.
- Reading, service, Bay State, 197-210.
- Reardon, Edmund, private railroad, Cambridge, 343.
- Rehoboth, fares, Bay State, 39-46.

- Reparation, Boston and Albany, to Davis and Brock, 161, 162.
 to Worcester Chamber of Commerce, 164-165.
 Revere, one-man cars, operation of, Bay State, 323-329.
 service, Bay State, 197-210.
 Richmond Telephone Company (see returns).
 Rockland, fares, Bay State, 39-46.
 service, Bay State, 197-210.
 Rockport, fares, Bay State, 39-46.
 service, Bay State, 197-210.
 Rowley, service, Bay State, 197-210.
 Rowley Telephone Company (see returns).
 Roxbury (*see Boston*).

 Safeguards, at bridges (*see Bridges*).
 Salem, fares, Bay State, 39-46.
 investigation of proposed discontinuance of "obsolete" six-party unlimited
 service, New England Telephone and Telegraph Company, 254-258.
 one-man cars, operation of, 323-329.
 Service, railroad, Boston and Albany, Hopkinton and Ashland, 452-454.
 Boston and Maine, Boxford, Danvers, Georgetown, Topsfield, 168, 169.
 Concord, restoration of, 166, 167.
 Dunstable, 169, 170.
 weighing charges, Sprague, Breed and Brown Company, 162-164.
 delivery of freight shipments of liquor into no-license towns, New York, New
 Haven and Hartford, 174-179.
 New York, New Haven and Hartford, Attleboro, Mansfield, West Mansfield,
 restoration of, 179-181.
 Great Barrington and Pittsfield, 181-185.
 Turners Falls branch, Esleeck Paper Company, 171-173.
 Westfield, Southampton, 185, 186.
 reduction in, investigation by Commission, Boston and Albany, Boston and
 Maine, New York, New Haven and Hartford, 187-192.
 Service, street railway, Bay State, Braintree, 197-210.
 Bridgewater, 211-213.
 Brockton, 197-210.
 Crow Point, 213-215.
 Dracut, 210, 211.
 East Bridgewater, 211-213.
 Gloucester, 197-210.
 Hingham, 213-215.
 Ipswich, 197-210, 215, 216.
 Ipswich Junction, 197-210, 215, 216.
 Lanesville, 197-210.
 Lowell, 197-210.
 Malden, 197-210.
 Medford, 235.
 Melrose, 216-219.
 Newburyport, 197-210.
 Randolph, 219, 220.
 Reading, 197-210.
 Revere, 197-210.
 Rockland, 197-210.
 Rockport, 197-210.
 Rowley, 197-210.
 Winchester, through, to Harvard square, Cambridge, 226-234.
 Woburn, 220.

- Service, street railway, Boston Elevated, Boston, 225, 226, 236-242.
 Cambridge, 226-234, 243, 244.
 Cottage Farm bridge line, 243, 244.
 Dorchester, 243, 244.
 Lexington, 225, 226.
 Mattapan, 244-246.
 Medford, 234, 235.
 South Boston, 236-244.
 and Bay State, change of crews, Hyde Park-Boston line, 220-224.
 Middlesex and Boston, Lexington, 225, 226.
 New Bedford and Onset, Onset Junction and Onset, 246-248.
 Northern Massachusetts, Westminster, 248, 249.
 Pleasant street, Boston, establishment of, in, investigation by Commission, 236-242.
 through, with Bay State, Arlington, Winchester, 226-234.
 Service, telephone, extension of, investigation, 250-254.
 free or reduced rate, for charitable purposes, 258-262.
 investigation, six-party unlimited, Salem, Beverly, Danvers, Peabody, Marblehead, New England Telephone and Telegraph, 254-258.
 Mann, T. J., restoration of, 262, 263.
 Sharon, fares, Norwood, Canton and Sharon, 134-143.
 land taking, Boston and Providence, 409-411.
 Shelburne Falls and Colrain street railway (see returns).
 Shelters at stations (*see Stations*).
 Shrewsbury, fares, Boston and Worcester, 47-63.
 trestle at Lake Quinsigamond bridge, 275.
 Signals, railroad, Boston and Maine, ball, extension of time for operation of, Peabody, 421, 422.
 changes in, East Somerville, 422.
 Worcester, Barber crossing, 422.
 interlocking, installation of, Ayer, 421.
 Peabody, 421.
 New York, New Haven and Hartford, changes in, 422, 423.
 Braintree to Greenbush, 422, 423.
 South Boston, 422, 423.
 Sleeping car company, income account, xcvi.
 (See also returns.)
 Smoke nuisance, abatement of, Boston and Albany, New York, New Haven and Hartford, petition of Pittsfield Board of Aldermen, 445.
 Somerset, fares, Bay State, 39-46.
 joint use of tracks, Bay State and Providence and Fall River, 400, 401.
 Somerville, extension of time for crossing, Boston and Maine, by West End, 341.
 sprinkler cars, Boston Elevated, 446.
 Somerville Horse Railroad (see returns).
 Southampton, service, New York, New Haven and Hartford, 185, 186.
 Southborough, fares, Boston and Worcester, 47-63.
 South Boston, alteration of crossings, South Boston cut, 356-371.
 land taking, New York, New Haven and Hartford, 411, 412.
 service, Field's Corner car house, Dorchester, and Dorchester street, South Boston, 243, 244.
 signals, changes in, New York, New Haven and Hartford, 422, 423.
 South Braintree, one-man cars, operation of, 323-329.
 Southern Massachusetts Telephone Company (see returns).
 Southern New England railroad (see returns).
 South Hadley, fares, Holyoke, 76-102.
 South Weymouth, one-man cars, operation of, 323-329.

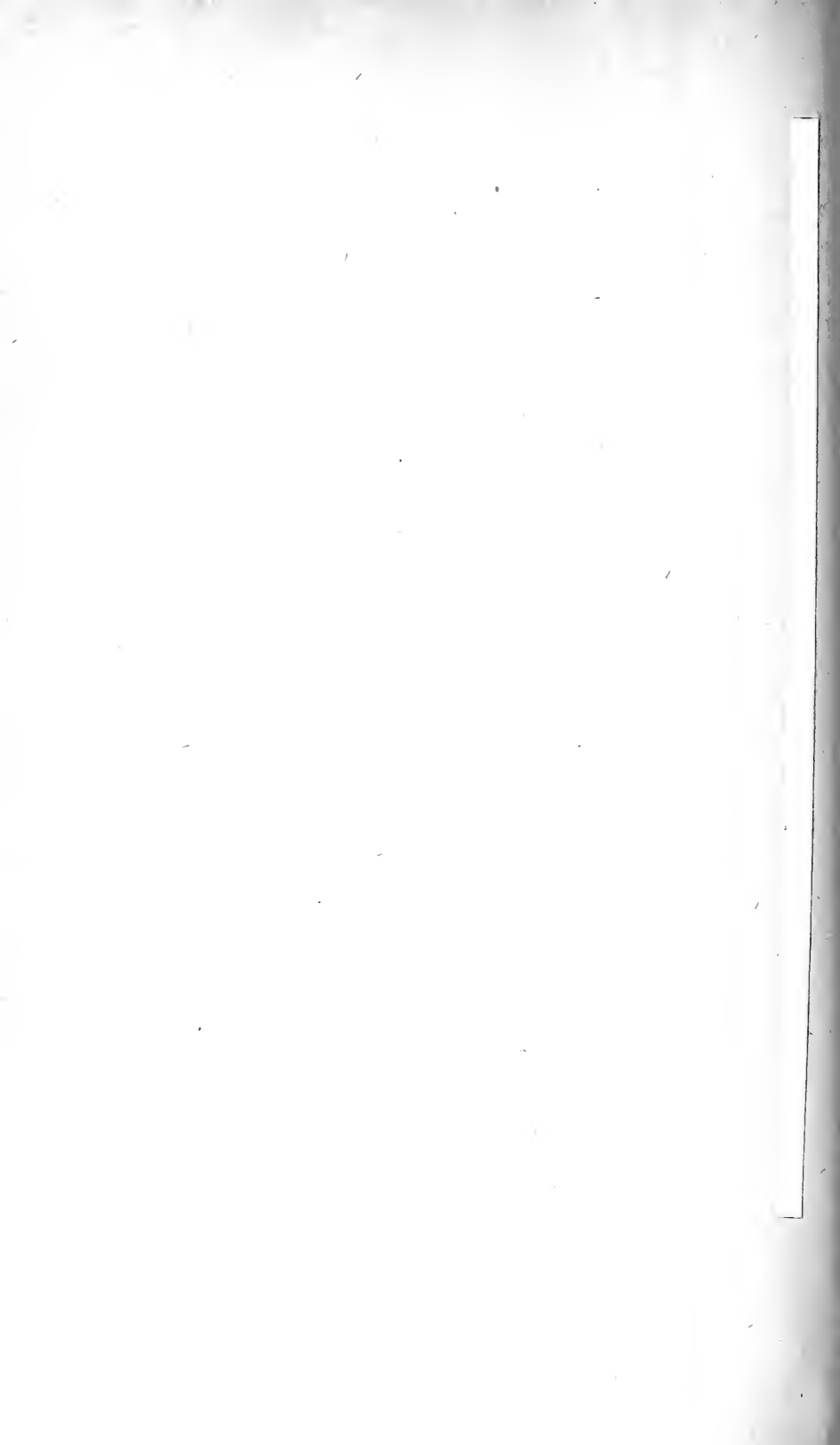
- Speed of cars, approaching drawbridges, 275-278.
 - Woburn, 424, 425.
- Spencer, fares, Worcester and Warren, 149-153.
- Sprague, Breed and Brown Company, weighing charges, Boston and Maine, 162-164.
- Springfield, land taking, Boston and Albany, 403-407.
 - New York, New Haven and Hartford, 413-415.
 - revocation of previous order, 413.
 - sprinkler cars, 446.
- Springfield Railway Companies (see returns).
- Springfield street railway, bonds, issue of, 311, 312.
 - dividends, communication to bank commissioner, 439.
- Sprinkler cars, Bay State, Lawrence, 445.
 - Malden, 446.
 - Boston Elevated, Malden, 446.
 - Somerville, 446.
 - Fitchburg and Leominster, Fitchburg, 446.
 - Northern Massachusetts, Fitchburg, 446.
 - Springfield, Springfield, 446.
 - Union, New Bedford, 446.
- Squantum, one-man cars, operation of, 323-329.
- State Line Co-operative Telephone Company (see returns).
- Stations and station accommodations, railroad, Boston and Maine, Malden station,
 - necessity of subway at, petition of Eugene C. Upton, 426, 427.
- Stations and station accommodations, street railway, Boston Elevated, Arlington street, terms of contract for use of, 427-429.
 - Egleston square, certificate of operation, 436.
 - changes in, approval of plan, 435.
- Everett, location of, 430-435.
 - loop track construction, approval of plan, 435.
 - parcel-checking cabinets, location of, approval, 436.
- Statistics, of accidents, xxvi, xxvii, lv-lxi.
 - of bridges, xxxi.
 - of express companies, xciv.
 - of railroads, xxxvi-lxi.
 - of railways, lxii-lxxxiii.
 - miscellaneous, lxxxiv-xcvii.
- Steamboat companies, income account, xcvi.
 - (See also returns.)
- Steamboats, Sunday, 437.
- Stevens, M. T., and Sons Company, private railroad, North Andover, 344.
- Stock issues (see *Capital Stock*).
- Stoneham, fares, Bay State, 39-46.
- Stony Brook railroad (see returns).
- Stop signs at drawbridges, Bay State, rule governing use of, 278, 279.
 - Boston Elevated, approval of, 280.
 - modification of order, 280, 281.
 - Massachusetts Northeastern, approval of type, 281, 282.
 - New Bedford and Onset, at Canal drawbridge, Bourne, 282, 283.
 - Union, over New Bedford and Fairhaven bridge, New Bedford, 283.
- Stoughton, fares, Bay State, 39-46.
- Stow, rates, Concord, Maynard and Hudson, 64-75.
- Street railway, accidents (see *Accidents*).
 - bonds (see *Bonds*).
 - bridges (see *Bridges*).
 - cars (see *Cars*).

- Street railway, consolidations (*see Consolidations*).
 construction (*see Construction*).
 crossings (*see Grade Crossings, Time Extended*).
 dividends (*see Dividends*).
 earnings (*see Operation*).
 employees (*see Employees*).
 equipment (*see Equipment*).
 expenses (*see Expenses, Operation*).
 express (*see Express Transportation, Street Railway*).
 fares (*see Fares and Transfers*).
 inspection (*see Inspection*).
 locations (*see Locations*).
 mileage (*see Mileage*).
 operation (*see Operation*).
 rates (*see Fares*).
 returns (*see Annual Returns*).
 service (*see Service*).
 signals (*see Signals*).
 stations (*see Stations*).
 statistics (*see Statistics*).
 stock (*see Capital Stock*).
 stops (*see Stops*).
- Street railway companies, earning five per cent dividends, 439.
 financial conditions and business operations, lxiii, lxxx.
 number, lxii.
 operation, lxii, lxiii.
- Street railways, discussion, xvi.
 number and mileage, lxii, lxiii.
- Sturbridge, rates for telephone service, petition of board of selectmen, 263-269.
- Subscribers, telephone, number of (*see returns*).
- Sudbury, crossing protection, New York, New Haven and Hartford, 346.
- Summer Street Extension Trust, private railroad, South Boston, 343.
- Sunday boats and trains, 437, 438.
- Sunderland, fares, Holyoke, 76-102.
- Surplus, railroad (*see returns*).
 street railway, lxxv.
 percentage of, to capital stock, lxxv.
 (See also *returns*.)
 telephone and telegraph (*see returns*).
- Swampscott, fares, Bay State, 39-46.
- Swansea and Seekonk street railway, capital stock, 312, 313.
 charter certificate, 446, 447.
- Tables compiled, from express returns, xciv, xcv.
 from sleeping car returns, xcvii.
 from steamboat returns, xcvii.
 from street railway returns, lxxxiv-lxxxix.
 from telegraph returns, xcii, xciii.
 from telephone returns, xc, xci.
 from voluntary associations returns, xevi.
- Taghconic Telephone Company (*see returns*).
- Tariffs, number filed, xxii.
- Taunton, bridge, street railway, repair of, 274.
 fares, Bay State, 39-46.
 Norton, Taunton and Attleboro, 129-133.
 one-man cars, operation of, 323-329.

- Taunton and Pawtucket street railway (*see Bristol County*).
 Telephone service (*see Service*).
 Telephone and telegraph companies, discussion, xvi.
 Terminal conditions, discussion, xv.
 Terms of contract for proposed station at or near Arlington street, Boylston street subway, 427-429.
 Tickets, reduced rate, 39-46.
 withdrawal of, by Bay State, in Fall River, 28-37.
 court decision, 465-468.
 Tool chests, emergency, discontinuance, 442, 443.
 Tools, emergency, investigation relative to, 383-385.
 Topsfield, service, Boston and Maine, 168, 169.
 Tracks, joint use of (*see Joint Use of Tracks*).
 Traffic, volume of, railroad, xlix.
 street railway, lxxx.
 (*See also Freight, Mileage, Passengers.*)
 (*See also returns.*)
 Train, mileage, xlix.
 service (*see Service*).
 Trains, Sunday, 437.
 Transfers, Bay State, 39-46.
 Groveland, 194-196.
 Concord, Maynard and Hudson, 64-75.
 Transportation, expenses and revenues of (*see Operation*).
 express and freight, on street railways (*see Express Transportation, Street Railway.*)
 facilities for, railroad, street railway (*see Service*).
 free (*see Free Transportation*).
 rates for (*see Fares and Rates*).
 Treasurer and Receiver-General of the Commonwealth, bonds, returned to Boston Elevated, proceeds, 297, 298.
 Trespassers on railroads, accidents to, lxi.
 Union Freight Railroad (*see returns*).
 Union street railway, dividends, communication to bank commissioner, 439.
 sprinkler cars, New Bedford, 446.
 stop sign over draw span of New Bedford and Fairhaven bridge, New Bedford, 283.
 tickets, between New Bedford and Fall River, 193.
 United States Government, extension of time for crossing, by West End, Watertown, 341.
 Upton, Eugene C., subway at Malden station, Boston and Maine, 426, 427.
 Uxbridge, fares, Milford and Uxbridge, 109-124.
 joint use of tracks, Milford and Uxbridge and Worcester Consolidated, 400.
 Vermont and Massachusetts railroad (*see returns*).
 Volume of work of Commission, vii.
 Wakefield, fares, Bay State, 39-46.
 Waltham, fares, Middlesex and Boston, 103-108.
 Walworth street bridge, New York, New Haven and Hartford, alteration of, 274.
 War conditions, discussion, viii.
 Ware, fares, Ware and Brookfield, 144-148.
 Wareham, fares, New Bedford and Onset, 125-128.
 Ware River railroad (*see returns*).
 Ware and Brookfield street railway, fares, rate case, 144-148.

- Warren, fares, Worcester and Warren, 149-153.
- Watertown, extension of time for crossing, United States Government tracks, by West End, 341.
- Webster, express transportation, Webster and Dudley, Worcester and Webster, Worcester Consolidated, 374-377.
- Webster and Dudley street railway, express transportation, Webster, 374-377.
- Weighing charges, Boston and Maine, petition of Sprague, Breed and Brown Company, 162-164.
- Wellesley, Everett street crossing, discontinuance, Boston and Albany, 349-352.
 - fares, Boston and Worcester, 47-63.
 - Middlesex and Boston, 103-108.
- Welsh, William G., private railroad, relocation, New Bedford, 344.
- West Acton milk car, discontinuance of, 166, 167.
- Westborough, fares, Boston and Worcester, 47-63.
- West Brookfield, fares, Ware and Brookfield, 144-148.
 - Worcester and Warren, 149-153.
- West End street railway, alteration of crossing, Boston and Albany, Boston, 355, 356.
 - bonds, interest on, increase in rate of, 319, 320.
 - issue of, 313-320.
 - application of proceeds, 315, 316, 318, 319.
 - bridge, Brookline avenue, Boston and Albany, alteration of, amendment to previous order, 270-272.
 - dividends, communication to bank commissioner, 439.
 - extension of time for crossing, Boston and Maine, Arlington, 341.
 - Somerville, 341.
 - New York, New Haven and Hartford, Dorchester, 341.
 - United States Government tracks, Watertown, 341.
 - operation, certificate preliminary to, 419, 420.
- Westfield, service, New York, New Haven and Hartford, 185, 186.
- West Mansfield, service, restoration of, New York, New Haven and Hartford, memorandum, 179-181.
- Westminster, service, Northern Massachusetts, 248, 249.
- West Newbury, fares, Bay State, 39-46.
- West Stockbridge Mutual Telephone Company (see returns).
- West Warren, fares, Worcester and Warren, 149-153.
- Westwood, fares, Bay State, 39-46.
- Weymouth, fares, Bay State, 39-46.
 - one-man cars, operation of, 323-329.
- Wilmington, crossing protection, Boston and Maine, 337, 338.
- Winchester, crossing protection, Boston and Maine, 337, 338.
 - switch connection for through service, Bay State-Boston Elevated, Arlington, 226-234.
- Winnisimmet street railway (see returns).
- Winthrop, accident, Boston and Maine, 385, 386.
- Woburn, crossing protection, Boston and Maine, 347, 348.
 - fares, Bay State, 39-46.
 - Middlesex and Boston, 103-108.
 - service, Bay State, 220.
 - speed of cars, regulations for, 424, 425.
- Woods, S. A., Machine Company, private railroad, Boston, 343.
- Worcester, changes in signals, Barber crossing, 422.
 - grade crossing, Worcester Consolidated, with Boston and Maine, 339, 340.
 - temporary trestle at Lake Quinsigamond bridge, 275.
- Worcester Chamber of Commerce, reparation, Boston and Albany, 164, 165.
- Worcester Consolidated street railway, accident, investigation of, Leicester, 394-398.
 - bonds, issue of, 320, 321.

- Worcester Consolidated street railway, capital stock, issue of, 321, 322.
crossing, by Howe Lumber Company, Marlborough, 343.
dividends, communication to bank commissioner, 439.
express transportation, Webster, 374-377.
grade crossing, Worcester, with Boston and Maine, 339, 340.
joint use of tracks, Milford and Uxbridge, 400, 401.
Worcester Railways and Investment Company (see returns).
Worcester and Shrewsbury railroad (see returns).
Worcester and Shrewsbury street railway (see returns).
Worcester and Warren street railway, fares, increase in, 149-153.
one-man car, approval, 333.
Worcester and Webster street railway, express transportation, Webster, 374-377.
Work of Commission, volume of, vii.
Workingmen's tickets, Bay State, Beverly, 37, 38.
Worthington Pump and Machinery Company, private railroad, Cambridge, 343.



Mass. Public ser-
- commission
- port

